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EDUCATIONAL THEORIES.

BY THE EDITOR.

Nihil potest esse diuturnum cui non subest ratio—CURTIUS.

"Nothing can be permanent for which there is not some latent reason."

THE subject on which we enter is full of interest. It calls for rigid examination. Under cover of new systems of instruction, gross deceptions have been practised. They are gilded bawbles which arrest the eye of the ignorant, and dazzle many of the sober-minded. They spring from the love of popularity or gain, or, from those who are deceived themselves, or wish to deceive others.

In coming into collision with prejudice or interest, we know, that it is neither the love of conquest over an antagonist, nor the exposition of the intellectual errors of an individual, that animates us in the great cause of education. To triumph over deception and self-esteem, or to silence by the energy of fact, the pulings of vain theorists and innovators, would afford little cause for joy, while the interests of the people and those of their children are jeopardized by paradoxical systems and incapable guides. Individual error, either in regard to philosophy, or religion, or education, is often propagated under the names of popular men, by ingenious sophistry, with the diffusive power of

contagion. The great mass of mankind, unstable in their researches after truth, and governed more by ardency of feeling than by the decisions of reason, are deluded by every thing new or apparently useful; while the only counteracting power, solid and keen judgment, is confined to the few in its operations. Hence the accumulated error which stalks before us daily in the garb of wisdom. The wildness of a theory is no evidence of its futility, when reflection is unexercised; and incorrect ideas have been received as truths, because mankind are more prone to take their opinions at second hand, than to ascertain their correctness by the laborious process of analytic investigation. Physical, mental and moral science have been very much retarded by this peculiar trait in the human character. It required the powerful minds of Kepler and Newton to subvret the Ptolemaic doctrine of the earth and the no less anomalous one of Tycho Brahe. It is not only the case in relation to matters, requiring the highest exertions of intellect to comprehend, but, in the ordinary transactions of life. Error, fortified in the strong hold of prejudice, remains firm, and slowly disappears, even after reason has pointed it out.

It has been remarked by Plutarch, that superstition is the twin child of ignorance; and that systems of philosophy as well as of education which are always predicated in a greater or less degree upon the philosophy in vogue, tend to foster both and to contract the mind in its reach after truth, unless, according to Plato, they are founded on the nature of things. Errors in either are extremely fatal in their consequences. Cities may be reared and destroyed, and affect not the great purposes for which mind was given to man; but systems of philosophy and education, coming into immediate contact with the human understanding, are the groundwork of a people's degradation, or greatness and virtues. Rome was great, while the rigid doctrines of Zeno prevailed in the formation of character, but, became degenerate when they were superseded by those of Epicurus. If national virtue depends upon duly training the mind, which is justly considered the spring of moral action, national greatness is no less dependent upon it. The time has gone by, when physical strength decided the fate of empires. Great operations, in the present condition of the world, are carried on by the active energy of mind. "The success of battles and treaties, the glory of nations and individuals, the perpetuity of empires," depend upon the achievements of intellect. The maxim of Lord Bacon, that knowledge is power, is no longer a paradox; and mind seems to have risen superior to almost every physical obstacle. It is for this reason, that a country must rely both for safety and greatness on the intellectual and moral condition of her citizens. "Ignorance is indeed the negative safeguard of the systems of bigotry and oppression, but, rational

religion and enlightened freedom are based upon knowledge and improvement."

The history of the human mind from its infant to its present state, shows that its faculties have been more or less efficiently expanded, and knowledge thus rendered deep or otherwise, according to the intellectual and moral power of those who bring into action the complicated machinery of the understanding. The hand of talent, operating upon an ordinary mind, under the influence of a philosophic method, produces greater and more lasting effects, than a narrow intellect can possibly upon the most promising genius. Hence youth of moderate talents, under skilful guides, have risen to high excellence, while those, intrinsically of bright powers, have, from the mere want of such aid, scarcely risen above mediocrity. We have no more right to expect mental or moral superiority from unsound systems of philosophy or education, than we have to expect that presumptuous quackery can successfully reduce a fractured bone, or remove a disease which requires, for that purpose, the best medical aid. To tolerate either defective methods or incapable men, no matter whether they are acting under the name of Lancaster, Pestalozzi or Fellemburgh, implies, if not a want of reflection, at least a lukewarmness, at which patriotism is alarmed; because it implies the two-fold negligence of the welfare of youth, and the prosperity of the nation.

Improvements in education, or in any science, we are rejoiced to see adopted; but, they must be the results of great minds, tested by experience, and based on the knowledge of undoubted facts, before they are embodied with any system. We must not suffer the polish of rhetoric, in which fancied excellence is often given to the world, nor the power of novelty to direct in deciding on their claims to intrinsic value. A system of promises of "mighty things to be effected," is generally one of deception. "Theory in education," as in geology, "has followed theory; and speculation has followed speculation. The imagination has been consulted more than the judgment, and the airy castles of hypothesis have dazzled the fancy without enlightening the understanding."* Modern innovations have weakened the old fabric of mental discipline, and introduced into its materials the seeds of final dissolution.

If Bacon, Locke and Reid are correct in their views of the mind and its complex operations, then the systems of instruction and books predicated on those systems, are wrong. The powers of sensation, perception and reflection, and those of abstraction and generalization are, in present modes, mere negatives. They are not successfully called into action, either by living instruction,

* Dewitt Clinton's Address before the New York Linnæn Society.

or the arranged matter of books. Thus it is, that Lancaster's method, and, what is *generally* called Pestalozzi's, are based on erroneous considerations of mental laws; and no system can produce correct results, when the process by which these results are to be obtained, is founded on error. To adopt, therefore, either method, and especially that of Pestalozzi, which, as it is pursued, is synonymous with *mere question* and *answer*, implies either a want of knowledge of the human understanding, which is sufficient evidence of an instructer's incapability, or a determination at gross imposition on public credulity.

The experience of every day proves either the one or the other of these positions. But, whether the numerous failures in relation to the proper cultivation of mind, are to be attributed to the want of a knowledge of mental philosophy, or, to the subtle principle of deception, which seems to have become by example or precept a constituent principle of human nature, is of little consequence in comparison with the fact, that these failures do take place. We know, too, that under the names of men who have become popular from accidental circumstances, and not from intrinsic worth, individuals have palmed upon the community the most shameless ignorance and barefaced impositions. With all the defects of Lancaster's and Pestalozzi's systems, more errors have been propagated under their *names* than those of any other men. If in Pestalozzi's mode, not perhaps as he pursued himself, the mind is drilled to a mechanical knowledge of geometrical lines and comparison of magnitudes, and its literary acquisitions are rendered diffusive by the irregularity of the procedure, and analytical investigation is precluded; much more in Lancaster's which has been denominated the Mutual or Monitorial Mode, by *way of eminence*, is the exercise of reason and judgment excluded, and mere routine substituted. Yet with these striking and characteristic traits wholly incompatible with either inductive or deductive philosophy, are the methods of these men brought before the people, and their assent demanded to their validity. Inductive geographies and *productive* grammars, and interrogative arithmetics, chemistries and geometries, rise in multitudes before the astonished community, claiming patronage and protection under the name of Pestalozzi. And, the individual who dares to expose their deadening effects on the expansion of mind, and to point out their fearful tendency, is held up by the *authors* and *venders* of such books, as an enemy to the cause of sound literature and education, and is rendered notorious by malignant invective.

So far, indeed, are we from believing that Lancaster's plan is an improvement in education, we hesitate not to assert that it has materially retarded and injured its solid interests. If the swathing of reason, of judgment, of imagination, instead of strengthening expanding and chastening them, and the teaching of dogmas,

instead of truths, are to be considered improvements, then we freely grant the superior excellence of Lancaster's plan, and Pestalozzi's too, over every other. Education, in fact, under Lancasterian and what is denominated Pestalozzian discipline, appears, after escaping from the labyrinths of Aristotle, to be moving towards a metaphysical species of science, which reverses the order of nature, erecting its throne upon ignorance, and calling fiction, fact; and the absence of correct ideas, true knowledge. But, it does not stop here. This "inductive or productive process," as it is termed in the language of system makers, rejects, in an indirect manner, as an absurdity, the proposition, that reason is only the extension of the knowledge of experience to probabilities, or inferring by analogy from known facts or truths, that others exist, because similar facts or truths are known to exist. Thus, though the advocates of this mode, do not mean to tell us so, yet they show by their works, that they reverse the order of nature, and leave the mind to be expanded by the retrograde operation of proceeding *from things unknown to things which are known.* Hence the loftiest branches of science are to be attempted by children, before their minds are adequate to comprehend their nature or their uses; and unfledged intellect is made, as if the attempt were the very essence of wisdom and the sole object of life, to watch the growth of plants or the motions of the stars, and to learn by *picture school books*, the internal organization of the former, and to calculate by *ready made questions*, the distances and magnitudes of the latter.

We live, it is true, in an age of science, and we offer our vows at its shrine with as much fervor as its acknowledged value demands. We think highly of botany and chemistry, and rank astronomy among those branches of learning which elevate the soul and display the handiwork of God. We hold physical science and geometry as the basis of all true knowledge. But if we consider the mockeries practised under the name of science and literature on the mind, and the end for which we live, and that we are to pass our lives amid conflicting events, arising from the imperfection of human nature, we shall find some reason to unite in opinion with Socrates, whose labor was to turn philosophy from the study of nature to speculations upon life, and to oppose with Johnson, innovators who are exclusively turning off attention from life to nature.* We have but one life; and Socrates and Seneca were of opinion, that what we had chiefly to learn was to *do good* and *avoid evil.*

In an age of experiment, like the present, "we must expect, that the most extravagant theories will be urged upon public attention as of paramount importance. Hence arises the necessity

* Dr. Johnson's Life of Milton.

of a careful examination into proposed improvements in education, in order to distinguish between such as are *genuine* and such as are *spurious.*" The sacred cause of our country and the voice of our little children who are unable to plead their right to the enlargement of mind, which they claim from their rational natures and connection with a future existence, demand in imperious language, a rigid investigation of the methods under whose influence they are to be reared, and of the individuals who assume the office of preparing them for the transactions of this life, and the destiny of another world.

PHILOLOGICAL GLEANINGS.*

BY ALBERT PICKET, SEN.

NO. II.

Vossius has observed, that science is conversant with things eternal and invariable; whereas Grammar, as generally understood, has no immovable and unvarying essence, but relates to the matter of language rather than to its form; and hence it ought rather to be called an art than a science. We, however, cannot overlook the circumstance that language, as it grows up with man, and forms, as it were, the main instrument of thought, is necessarily so interwoven with the operations of mind, that neither can the art be well comprehended without a knowledge of the science, nor can the science be easily developed and rendered fully intelligible without reference to the art. By the *form* of language, we mean its signification; by the *matter* of language, we mean the sound of words in speech, the movement of the body in gesture, and, in general, the physical and external means employed to effect a communication of the mind. The matter of speech may be considered, generally, as regarding the physical properties common to all languages, or particularly with reference to the construction of one or more languages. In the former point of view, it is commonly deemed a part of general grammar; in this, and in our future numbers, we shall endeavor to confirm, and illustrate all our general positions, and consider in what manner the invention

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* The matter of this article has been drawn from several valuable works, and condensed as much as possible.

and practice of written language has affected the science of Grammar.

In the mind of man the consciousness of simple existence is the source and necessary condition of all other powers; as in language, the expression of that consciousness by the verb, *to be*, is at the root of all other expressions.

But we are conscious of different states of existence, in some of which we act, and in others we are acted upon: and thus in language, a verb is a word which signifies *to be*, *to do*, *to assert* or *affirm*, or *to suffer*. No language, indeed, ever was, or ever could be formed without such verbs; but the case is different with regard to theories of language and systems of Grammar. These may be, and have been constructed, on the hypothesis, that the mind of man is a mere passive recipient of mechanical impressions; as a something which may be impelled like a foot-ball, but which cannot give to itself, or to any thing else, the slightest impulse. On such a question as this, the only appeal lies in the common sense and daily experience of mankind; and the result of that experience is clearly attested by all languages, living or dead — a species of evidence which is the less to be resisted, because it is not the result of any systematic arrangement whatever. Every language has grown up from the necessities of those who have used it, and not from intention; from accident, and not from theory; and yet there is among them an universal agreement in their fundamental principles. Those principles, then, are indisputably founded on the common constitution of the human mind.

This mind is undoubtedly passive in some respects. If I open my eye to the light, I cannot choose but see; if a sound strikes my ear, I cannot help hearing. These, and many like states of existence, derived from the bodily organs, are called *sensations;* there are other states, in which we are more or less passive, derived from the mind, and commonly called *emotions.* When we come to analyse these latter, we shall easily discover that we are not so entirely passive in their reception, as is often supposed: nevertheless, as we in both cases, "suffer," that is to say, are acted upon by external causes, we may not improperly include *sensation* and *emotion* as modes of the passive principle, under the common name of *feeling.* The states of sensation, which are agreeable to our nature, we properly call *pleasure*, those of an opposite kind, we call *pain;* and the same names are naturally transferred to those emotions of the mind which seem analogous to the respective sensations of the body. Thus the feeling of guilt is called painful, and that of joy, pleasant. The pleasurable sensations and emotions, and their real or supposed causes, are all called by the common name of *good*, and their opposites by that of *evil.* The expression of feeling is what constitutes in language, the *passive verb.*

As we have called the passive principle, feeling; so we call the active principle, *will* or *volition*. It is this principle which may truly be called the life of the human mind; it is this which forms and fashions the mind; it is this which impels and governs the man. The conscious being, in his active state, has a power: he says, I *do* this or that: and hence arises the *active verb*. Hence also arises the *pronoun:* for the very idea of an act involves the idea of a *cause;* and it has been clearly enough shown by different writers, that if the idea of a cause did not exist within the mind, it could never be suggested from without.

The will, in its growth, becomes a *moral* energy, that is, it impels us to do good as good, and consequently to greater good rather than to the less. To choose the greater good is to do *right*, to choose the less good is to do *wrong*. Let philosophers argue, as they please, on liberty and necessity; let them reconcile, as they can, those high doctrines

> Of Providence, Foreknowledge, Will, and Fate,
> Fix'd Fate, Free Will, Foreknowledge absolute;

still the individual, from the first dawnings of reason, distinguishes right from wrong, and knows that he is a cause of the one, or of the other; and feels that the power which he exercises as a cause, is a talent for which he is responsible. Thus is formed *conscience*, the light and guide of life. We have not now to discuss at length the nature and effects of this precious faculty: other and fitter occasions may be found for that investigation; but we cannot avoid noticing, that as the ideas of right and wrong are seated not merely in the mind, but in the first and elementary rudiments of the mind, it is a dangerous and fatal error to represent them as contrivances of language, to say that "*Right* is no other than the past participle of the Latin verb *regere*, and "*Wrong* is merely the past tense of the verb *to wring*." This is part of the history of words;—it is no part of their philosophy.

Neither *will* nor *feeling* have in themselves any limit. The stream of conscious being is, in itself, continuous; it exists alike amid the roar of cannon, and in the soft breathings of the vernal air: in the deep, protracted meditation of a *Newton*, or in the brief glimpse that is caught of

> "The snow that falls upon the river,
> A moment white, then lost forever."

What is it, then, that reduces the chaos of will and feeling first into distinguishable elements, and then into individual masses? It is the forming and shaping power within us. It is the divine faculty, "looking before and after," to which in its perfection, we give the name of *Reason*. Reason holds, as it were, the balance

between the passive and active powers of the mind. It is fed and nourished by the impressions of the one: it grows and moves by the energy of the other. It has several stages or degrees, of which the first is *Conception.*

By conception, we mean that faculty which enables the mind to apprehend one portion of existence, separately from all others. In other words, the first act, or exercise of the reasoning power is to conceive one object, or thing, *as one.* Hence arises in language the *noun;* for "the noun is the name of a thing." Here it is, that almost all the modern writers on Grammar have erred. They seem to have considered no such power in the mind to be necessary, and no such act to be performed. They seem to have supposed that *things*, or objects, affected the mind as such, by their own power; and that the mind was quite passive in this respect. When we come to examine the fundamental part of their system, we find the greatest possible confusion of terms. According to one, the elements of thought are *ideas*, another calls them *objects*, a third *sensations*, and so on. If you ask what is meant by these respective terms, you are still more bewildered. "An idea," says one, "is that which the mind is employed about whilst thinking." A most vague and insignificant expression; and yet it has been justly observed, that "vague and insignificant forms of speech and abuse of language have so long passed for mysteries of science; and hard and misapplied words, with little or no meaning, have by prescription such a right to be mistaken for deep learning and height of speculation, that it will not be easy to persuade either those who speak or those who hear them, that they are but the covers of ignorance, and hinderance of true knowledge."

All this is eminently true of the abuse and misapplication of the word *idea*, which had a perfectly distinct and specific meaning, until it was, in an evil hour, made "to stand for whatever is the object of the understanding, when a man thinks," or "whatever is meant by phantasm, notion, species, or whatever it is which the mind can be employed about in thinking." From that moment, the word *idea* became so extremely convenient to persons who did not much like the trouble of thinking, it served as such a maid of all work, in the family of Lady Alma, the mind, that nothing was either too high or too low for it. "Seneca was not too heavy, nor Plautus too light;" and persons, who, in the common phrase, "never had two ideas in their lives," would give you their ideas on politics or the weather, on the flavor of venison, or the right of universal suffrage, with equal facility and fluency.

Some of these ideas, it has been said, are simple, and some complex. In the former, the mind is passive; in the latter, there

is an act of the mind combining several simple ideas into one complex one; but this distinction has been altogether denied, in more recent times; and we have been told, that "it is as improper to speak of a complex idea, as it would be to call a constellation, a complex star." But be these ideas simple or complex; be they ideas of sensation, or ideas of reflection, ideas of mode, of substance, or of relation, the great difficulty is to understand, in every case, how each exists as *one;* how it is bounded, limited, and set out in the mind; and this, we may say, cannot be done in any case without an act of the mind, and exercise of the peculiar faculty which we call conception.

What one set of writers say of *ideas*, another set say of *objects*. "An object in general," says Condillac, "is whatever is presented to the senses, or to the mind." Happy definition! But still the question returns: — what constitutes one object? What is meant by one presentation? Is it the sensation, or thought, which takes place in a minute, in a second, or in any other portion of time? Is it the impression made on one sense, or on one part of the organ of that sense? Is it the sensation of warmth, for instance, experienced by the whole body; or that of light experienced by the eye? Is it the impression made upon the retina by a house, by the door of the house, by the pannel of the door, or the pane of the window? Is it the altitude of the building, or the color of the brick? These questions are endless, and perfectly insoluble, if that which makes an object of one thing to the mind be not an act of the mind itself; but if it be an act of the mind, then it follows, that with regard to the very first materials of our knowledge, the mind is not passive, but exercises some peculiar faculty; which faculty we call conception.

Mons. Condillac, indeed, admits, that objects are not distinguished but by remarking some one or other of them particularly; and this particular remarking, he calls *attention;* from whence it may, perhaps, be concluded, that the difference between him and us is a mere difference of words; and that he means, by attention, nothing more nor less than what we mean by conception. This, however, is an error; for attention, according to him, is a simple faculty, acting only in one mode, and acting *necessarily*, from an external cause. Thus, he states, that the cause of attention to sensible objects, is an accidental direction of the organs; manifestly, therefore, according to him, the mind is no less passive in attention than in sensation.

We say, on the contrary, that in conception, the mind acts. The word "to conceive," in its origin, affords an easy explanation of the mode of action. This word, which is derived from *con* and *capio*, expresses the action by which we *take up together* a portion of our sensations, as it were water, in some vessel adapted

to contain a certain quantity; for, we have before observed, that sensation is in itself continuous, as an ocean, without shore, or soundings: it does not divide itself into separate portions, but is divided by the proper faculty of the mind. The faculty of conception, like all other faculties, operates by certain laws, in a certain direction, and in a certain manner, for such is its constitution. It cannot enable us to view things temporal under the form of eternity, to conceive that a certain time occupies a certain space; or that emotion belongs to the class of sensations; that jealousy, for instance, is red, or green, or blue, or smooth, or rough, or square, or triangular. These laws, which regulate the power of conceiving thoughts, it will be necessary for us to consider.

The first law we shall notice, is that of *extension*. We are so constituted, that we cannot conceive certain objects otherwise than as occupying *space*. The faculty of conceiving them, therefore, presupposes in the mind a sense of space; but this sense has again its necessary laws or modes of operation. In other words, we cannot conceive space as extending in length and breadth and thickness, and bounded by points and lines and surfaces. It is by applying these laws to certain objects, that we conceive them to be more or less extended, and to possess different shapes and forms. To say that we get the idea of space by the sense of sight or touch, is to confound our notions of sense, which imply existence in space; it is to reverse the order of knowledge; for, if the mind were originally unfurnished with a peculiar faculty, enabling, and indeed compelling it to refer the sensation of sight and touch to some part of space, it could no more acquire an idea of space from those sensations, than from the emotions of gratitude or fear. This peculiar faculty, applied to the sensations of sight and touch, of hearing, taste, and smell, enables us to conceive our own bodily existence, and that of the external world. Accordingly as we apply it more or less comprehensively, we conceive the existence of objects larger or more minute: and accordingly as we exercise it with more or less care and attention, the external forms and disposition of objects appear to us more or less accurately defined. It is not, therefore, the external object which necessarily gives shape and form to the conception; but the conception which by its own act embraces a given portion of space, and thus gives shape and form to the external object.

Similar observations may be made on the law of duration, or *time*. To say that time is a complex idea gathered from reflection on the train of other ideas, is to forget that the very notion of a train is that of a succession in time, and therefore presupposes what it is adduced to prove. There is nothing complex in the nature of time or duration, but it is a form under

which we are necessarily forced to contemplate all things external to us, and some things within ourselves. It is a law of our nature, and so far as regards its peculiar objects, is inseparable from the human mind. But again, it is not the lapse of any particular portion of time which necessarily limits the duration of any object of our thoughts, for we can as easily think and speak of a century as of a second: it is the mind which conceives, as one object, the life of a man, or the gleam of the lightning, a long year of toil, or a brief moment of delight.

These, then, are the laws of *simple* conception. Whatever occupies a certain portion of time, or of space, or of both, we consider as *one* thing, or *one* thought; but things or thoughts succeed each other incessantly, and by dividing sensation into units, we have done no more than to divide the ocean into drops, or the sand into graius. A further law of conception succeeds. This faculty takes a more complex form. We distinguish conceptions by their *number;* and hence, in all languages, the noun has a *plural number* as well as a singular, in signification, and generally in form. But as the plural is derived from the singular, so the power of conceiving many depends on the power of conceiving one. It has been justly observed by Mr. Locke, that "there is no idea more simple than that of *unity*, or *one*." "Every object, our senses are employed about," says he, "every idea in our understandings, every thought in our minds brings this idea along with it." Now since this is the case, since no object, no idea, no thought, ever is conceived in our minds without this impression of unity, why should we imagine that any can be conceived? And if it cannot be conceived without such impressions, then must we consider the power by which that impression is produced as essential to the conception. Before we can speak or think of any thing, we must first conceive it to be one. This *one* may be finite or infinite; that is, our conception may be perfect or imperfect; but still, in order to become an element of reason, it must exist, as one, in the mind. Even the conception of *many* exists in the mind as that of *one multitude;* and if that multitude be divided into distinct parts, so as to be numerically reckoned, the number, whatever it may be, is still contemplated as *one number.* Simple conception indeed could never have advanced us beyond the notion of an unit or integer; it is by the aid of the other reasoning faculties, which we shall hereafter notice, that we are enabled to form the complex conception of number, and to build up the whole science of Arithmetic.

Conceptions succeed each other indifferently, whether they are alike or unlike; but the mind can only number them by classing them, and can only class them by their similarity; which similarity, when complete, is in the contemplation of the

mind, *Identity.* Much has been said of this source, from whence we derive the notion of our own personal identity. Surely, if any thing is essential, not only to reason, but to feeling, to will, and even to consciousness, it is this notion. When Descartes invented his famous reasoning, *Cogito, ergo sum*, he clearly assumed his personal identity: and it is utterly impossible for a human being to reason or think at all, without such an assumption. Even in madness, though the actual identity is often confounded, though a man may fancy himself to be Alexander the Great, or even to be the Almighty, he has before his mind, an imaginary identity: he thinks and acts as one being, and not as two: and again, in dreams, when we sometimes see ourselves dead, or alive, yet the *self* which we contemplate is a mere imaginary personage, with whom we have a strong sympathy, as we have with the hero of a romance. The contemplator always seems to think and act as a separate individual, and never loses the deep sense of identity.

ON THE SCIENCE OF MIND IN REFERENCE TO ORAL INSTRUCTION.*

NO. I.

THE study of mind as well as of matter, has its plain and simple elements; which are within the reach even of those who are only beginning to acquire the rudiments of knowledge, as being founded upon that acquaintance, which every one possesses, even in early life, with the operations of his own faculties in the perception and discrimination of the objects which surround him. In this science, too, as in every other which proceeds upon regular principles, the attention of the student should be confined at first to simple views, and particular facts; and it is only upon these, when properly ascertained and classed, that he afterwards advances, by successive and connected steps, to general conclusions relative to the several qualities and operations of mind.

To the elements of this science, therefore, I have recourse, on the present occasion, as the *mother* science, so to call it, from

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* This article is the substance of a long essay in Jardine's Philosophic Education. We shall prepare a similar one from the same work, for our next number.

which all others derive at once their origin and nourishment, Thus, logic, metaphysics, ethics, jurisprudence, and eloquence, have their common origin in mind; while in all the branches of natural philosophy, the powers of intellect are the instruments, at least, by which knowledge must be acquired. However much these sciences may diverge from one another, in the more advanced stages, and the practical applications to which they lead, there can be no doubt that they are closely allied in their origin; that they have common principles and a common language; and, consequently that an intimate acquaintance with the phenomena of mind must form a suitable introduction to the study of every branch of human knowledge.

An additional reason for the choice of subject now mentioned might be derived from the consideration, that the close connection of the first part of human life with external objects, and the powerful impression which these are constantly making upon the mind, seem to require, at the commencement of a philosophical education, that a stand should be made in order to give the current a different direction, and to emancipate, as it were, the intellectual faculties from the thraldom of the senses. Nor is this change of the attention from outward objects to the emotions and workings of the thinking principle within, so easy as is sometimes imagined. But there can be no doubt as to the good effects of this mental discipline. The man who has been taught in early life to withdraw his thoughts from the impressions of sense, and to fix them upon the objects of consciousness—to watch narrowly the rapid movements and changes which take place among his ideas—to form distinct notions of the intellectual faculties and their operations—is much more likely to acquire just habits of thinking than he who has never been accustomed to analyze his own feelings and trains of reasoning.

It is not to be expected, however, that the study of mind should be found unattended with considerable difficulties. These are not to be avoided, and they ought not to be concealed. The teacher must not promise too much ease, and the absence of all irksome labor. On the contrary, he must find it his duty to represent to the young persons whom he addresses, that no valuable object of any kind can be obtained by them, unless they voluntarily submit to protracted exertion and repeated sacrifices. This important truth should never be allowed to drop from their minds. It should be imprinted on every object which excites emulation or calls forth exertion. It should be at once the guide and motive of all their endeavors: and the happy effects of it will appear in the rapid increase of knowledge, as well as in the ready and successful employment of all the intellectual faculties.

The particular department of mental science which I have selected for the business of teaching the higher classes, is an analysis of the powers of the understanding—perception, attention, consciousness, reflection, memory, imagination, abstraction, judgment, reasoning. The object of this analysis, I need hardly observe, is to communicate distinct notions of these original faculties—their operations and offices—their connexion and intimate dependence upon one another.

In conducting this process, it ought not to be regarded as a matter of indifference with what part or quality of the subject the analysis begins. There is a certain order established by nature which must prove the best guide to the student, in following out his investigations; and to which, indeed, the mind is inured by its earliest habits of inquiry, whether in the department of art or of physical science. In examining a tree, for example, the mind naturally passes from the trunk to the branches, the leaves, the flowers, and the fruit; and, in the analysis of a watch, or of a steam engine, the process commences with the source of motion, and advances, through a series of connected powers, till it arrives at the result or ultimate effect. Similar connections or dependencies may be traced among the faculties of the human mind; and, in this case, as in all others, the student is most likely to attain success by a faithful adherence to those simple rules, which are dictated by the natural order and construction of the several parts of the subject.

The particular modification of mental power, which is the subject of the analysis now to be entered upon, is called *perception*—that faculty, whose office it is to open the first and wonderful communication between mind and matter. In beginning the analysis of each mental faculty, I have found it useful to present it to the minds of youth, by a general description of its object and operations; and afterwards, to direct their attention, successively, to the several modes in which it puts forth its power, and in different cases and circumstances: and, in particular, to conduct the explanation in such a manner, as to appeal from the description of the faculty, thus given, to the consciousness of my pupils; referring them, from the theoretical view of its operation, to the actual feelings or notions excited in their own minds.

According to this view, "*perception* is that power or faculty of the human mind, by the operation of which we receive notions, ideas, sensations, from the qualities of external objects, by means of certain impressions, or effects, upon the organs of sense, when the attention of the mind accompanies the direction of these organs to the particular object before them."

I here call *perception* a mental power or faculty. It is impossible to proceed one step in the analysis, without leading

the student to form a notion of power,—or rather, putting him in the way of acquiring the only notion of it which he can ever expect to attain. The first notion of power, then, he will find, is derived from observing changes which are made, or the effects which are produced, by one external object upon another, as well as by these objects upon the mind through the medium of the senses. The child long perceives these effects, without acquiring any notion of power distinct from the object itself, which operates the particular change he perceives; and it is not until his mind has become a little more matured, and has been furnished with experience, that the young observer learns to draw inferences, and to form general conclusions. For those who are farther advanced, there is little difficulty in adapting such illustrations as will enable the enquiring mind to perceive the connexion or relation which subsists between *cause* and *effect.* Let them suppose they have placed before them, a needle at rest upon a table, and a magnet within a certain distance of it. Motion instantly commences in the needle, and it rushes to the magnet, in opposition to the laws of gravity: here a change is perceived; an effect is produced; the two objects are conjoined. The needle is again placed at rest upon the table—the magnet is removed, and a piece of common stone is substituted—the needle now remains at rest. A question then naturally occurs to the student—what is in the magnet which produces the motion of the needle? It must be something which does not meet the senses; for it is neither in the weight, nor in the shape, nor in the color of the substance that this singular energy resides. To this unperceived property in the magnet—to that unknown something—the term *power* is applied; and, when we speak of it, in relation to the effect, we call it the *cause* of the motion which appeared in the needle.

By a similar process, we arrive at at a similar conclusion with respect to the changes of motion and direction, in the several members of the body, arising from an act of volition. We are conscious of an exercise of the faculty, and we observe, at the same instant, that a change, connected with the body, has taken place. We are likewise conscious of certain acts of volition directing the motion of the mind; in all which cases, the act of volition and the corresponding changes are conjoined so closely, that they naturally force themselves upon our observation, and remain associated, even after, in the particular relation of *cause* and *effect.* We observe the change indeed, but we observe nothing more. We see a fact, in particular circumstances, resulting as a consequent from an antecedent; but, of the cause, considered metaphysically, we can form no notion whatever. "Vis est notissima—causa latet."

Nor is it at all singular that, while we are able to form clear and distinct notions of an effect, we should find it impossible to penetrate into the nature and mode of operation of the cause, from which that effect proceeds. We have a vivid perception, for instance, of the effects which spring from the union of the mind and body, in the human constitution; and yet we cannot form the most distant conception of the principle upon which that union is founded. Indeed, our purest and most correct notions of power are derived from mind. A billiard-ball, for example, is at rest upon a table:—a mace is made to come in contact with that ball, which is instantly put in motion, and in this case, although it is the hand which moves the mace, the source of motion is in the mind, which, by an act of volition, stretches forth the bodily organ. By attending to these, and similar examples, the student may be assisted in forming the abstract notion of *power.*

The terms *power* and *faculty*, as applied to mind, it may be observed, have nearly the same radical meaning. The former, however, is of a more extensive import than the latter, and may be used in relation to material as well as to mental objects. Thus, we say of a stone that it has the power, not the faculty, of gravitation; while, on the contrary, in reference to the understanding and volition of the human mind, the term faculty has a much more suitable application than the term power. As a proper use of words is of the utmost consequence for preserving our notions clear and distinct, it may be further observed, with regard to the terms now under consideration, that there are in the soul of man certain energies or active principles, to which neither the one nor the other will properly apply; and, accordingly, though we speak of the faculty or power of memory, of judgment, or of reason, we do not employ such expressions as the faculty of desire, or the faculty of hatred.

It is said above, that, by the faculty of perception, the mind acquires or receives sensations, ideas, notions, etc. In going over with the student the several parts of this general description, it naturally occurs to remark, that the term *acquire* merely denotes a certain operation by which the mind becomes possessed of something which it had not before; and that this and other analogical expressions are used in explanation of mental phenomena, only from the imperfection of language, and from the difficulty of substituting, in their place, any forms of speech which would prove more definite and intelligible.

According to Mr. Locke, all changes of whatever kind, or degree, made upon the mind, directly or indirectly, through the medium of the external senses, are to be called *sensations;* for, he holds that all our ideas are either ideas of sensation or reflection. There is, however, an obvious distinction applicable to our

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sensations founded on the different degrees of pleasure or of pain with which they are accompanied, or rather, perhaps, in which they consist. The odor of a rose, for example, produces on the mind of the percipient, an effect so different from the color of a board or the coldness of an iron bar, that these sensations ought certainly to be discriminated, and classed under separate heads. In like manner, the sensations of pain from the gout, are very different from the ordinary sensations of touch; and so with regard to all the senses, and their respective objects. On this topic, it is farther observed, that while perception always implies a greater or smaller degree of knowledge, in relation to the subject upon which it is exercised, sensation conveys no knowledge whatever of its cause; being confined, in its intimations, to the different degrees of intensity in which the various secondary qualities of body may happen to exist, in particular substances.

The knowledge derived from the perception of the material world around us, is expressed by the several terms *ideas*, *notions*, *thoughts*, representative of certain objects, with their qualities and concomitants. The term *idea* from the Greek verb *ἰδῶν*, properly signifies a thought representative of such objects as have been perceived by the sense of sight; and it is owing to the poverty of language that it is transferred to the first degrees of knowledge, received by means of all the other senses; and, farther still, to those primary notions, or elements of abstract thought, which compose trains of argument, and chains of reasoning, in the mind of the divine, the philosopher and the statesman.

MORAL CULTURE

BY THE EDITOR.

——— Fortis, omissis
Hoc age deliciis.—HORACE.

"*Have spirit enough to give up your indulgencies, and mind the one thing needful.*"

THE prevalent inattention, at the present day, to moral instruction and family government is an evil we have to deplore. It is a sign of the decay of religion, and has most pernicious effects. Were persons rightly impressed in regard to these matters, they

would be solicitous for the welfare of those whom Providence has committed to their care. In this respect, Abraham was a pattern. "I know him," saith God, "that he will command his children and his household after him, and they shall keep the way of the Lord, to do justice and judgment." How few, at this day, deserve this glorious testimony! Who copy this glorious example? Many act as if nothing more were required than to give their children human learning, and provide for their advancement to riches, or honors;* whereas, their happiness, and their service to society, depend much more on a religious education and habits of industry and virtue, than on the finest talents and the most improved understanding. What are all human acquirements, without a sound heart to direct? What can parents substitute as an equivalent for this? "What is a man profited, if he shall gain the whole world, and lose his own soul?" It is by early instruction in families, the force of good example, and *prudent discipline*, that persons are formed to be useful members of church and state. The influence of these is felt through the whole course of life. "Train up a child in the way he should go, and when he is old he will not depart from it."

On the contrary, when children are permitted to grow up without pious instruction, and to follow without restraint, their own inclinations, they are likely to bring disgrace upon themselves, and injury to society. The foundations of order and morality are destroyed. Nor is the evil confined to the generation in which they live, but reaches to succeeding ones. Who is to teach, when all are ignorant? What hope remains, when the whole mass is corrupted?

We feel, and see around us, the consequences of this neglect, and unless a remedy is applied, must feel them still more severely. To this is greatly to be ascribed those dangerous principles and dissolute habits which prevail. The untutored youth is prone to

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* Crates, the old Greek philosopher, often used to say, "that if it were possible to make them hear, he would get up to the top of the highest pinnacle, and cry out with a loud voice, Good people, whither are you going in such haste, *ye who apply yourselves so earnestly to get money, but who take but little thought for your children, to whom you must leave it all.*"—Many fathers, continues Plutarch, have arrived at such a love for money, and such an indifference for their children as to choose such instructers for their sons and daughters as are good for nothing:—*looking out for one of whom ignorance may be had a bargain.*

To the same purpose, old Roger Ascham remarks, and upon the same subject, "It is a pity that people take more care to find out rather a cunning man for their horses, than a cunning or wise man for their children. They say nay in word, but they do so in deed. For to one they will gladly give a stipend of 200 crowns a year; and are unwilling to offer the other 200 shillings. God, that sitteth in heaven, laugheth their choice to scorn, and rewardeth their liberality as it should be; for, he suffereth them to have tame and well ordered horses, but wild and unfortunate children; and therefore in the end, they find *more pleasure in their horses* than *comfort in their children.*"

admit the suggestions of infidelity, and run into the utmost licentiousness. When his mind is not stored with moral truths; when they have been slightly impressed on his heart, and he is unacquainted with the doctrines of christianity and the evidence by which they are supported, he is easily persuaded to reject their authority. Where infidelity has set its seal, we have no guarantee of moral action; because, there is no motive sufficiently strong to operate against indulgence in criminal propensities and acts. Parents have, by the laws of nature, many important duties to perform, on the discharge of which rest the moral happiness and intellectual greatness of their children. The performance of the former naturally falls to parents; and both become the duties of teachers. To form great and good men, parents and teachers should unite their exertions; their interests should never, for a moment, be separated; or, moral obliquity may be the result of the one, and an enlarged but depraved mind of the other. Knowing the disposition of human nature, every means should be taken to direct it into a proper channel.

What we mean by family discipline is not the mere compelling of children by parents to perform this or that duty, because they are *told* to do it, but, we mean that kind of discipline which unites precept and example, and which parents illustrate by the acts and conduct of their lives. It is idle, nay foolish, to suppose that the morals of children will be sound, when example is corrupt, or when the tongue utters that as right, which is proved false by the first act of parents. Were parents aware of the efficacy of example, they would not, and could not, as rational beings, conduct in the manner so many do, in presence of their offspring. The poison which mildews the future man, is generally imbibed in youth either under the parental roof, or through inattention, by suffering children to mingle in the society of those whose minds are uncultivated, or morals tainted. Perhaps no better instance of the force of example can be given than that recorded by Plutarch in his system of morals. "Lycurgus," says he, "the Lacedemonian lawgiver, once took two whelps of the same litter, and ordered them to be bred in a quite different manner: whereby the one became scavel and ravenous, and the other of a good scent and hunting. Shortly after, he took occasion from this circumstance, in an assembly of the Lacedemonians, to discourse in this manner: 'It is of great advantage, fellow-citizens,' exclaimed Lycurgus, 'to the attainment of virtue, when any one by the customary practice of wholesome instruction and precepts, is trained up in the way of living conducive thereto, which I will presently let you see by *example*.' He then ordered those two whelps to be brought into the midst of the hall, in which also were set down before them a vessel in which meat was wont to be boiled, and a living hare. Wherefore, as they had been

bred, the one immediately flies upon the hare, and the other runs as greedily to the vessel. And while the people were musing, and not perfectly apprehending what he meant by producing those two whelps thus; "this," he adds, "is what I before told you; for you see these whelps do as they were bred; and though they were of the same litter, yet the diversity of breeding has made the one a *good hound*, and the other a *cur, good for nothing but to lick pots and dishes.*"

If the greatest care is required under the immediate eye of parents in the education of children, inasmuch as habits are concerned, it becomes a matter of as great consideration, perhaps, in relation to the teachers of those children; for, teachers may *undo* what a judicious parent has done, with as much ease as parents, by a word or act, may *undo* what a judicious teacher has done, or is endeavoring to do. Hence arises the necessity, nay duty, of those who have children to be taught, to seek men who are adequate in all respects to this purpose, and unite with zeal with such men to effect the objects of intellectual and moral instruction. Children are, perhaps, as easily tinctured by the uncouth habits of those who teach them, as by the manners of those who nurse them. It is a true maxim, that he who lives with a lame man, will learn of him to halt. A good teacher should be to his scholars what Phœnix was to Achilles; teach them action as well as conduct.

Few people, indeed, are really aware of the influence of teachers in moulding the intellectual habits, if not the moral, of those under their charge. For this reason, says Plutarch, "we should look for able men and of the best experience in teaching. The very spring and root of honesty and virtue lie in good education. And as husbandmen are wont to set forks to prop up feeble plants; so do *honest* teachers prop up youth by careful instructions and admonitions, that they may duly bring forth the buds of good manners. But there are certain fathers in these days, who deserve contempt, from the ease and little thought with which they commit their children to the charge of men who set themselves up for able preceptors, while, in truth, they are not fit either from learning or manners, to do the duty which is implied towards God and society by assuming to themselves that office. And there are some fathers too," says the same philosopher, "that although they are told, nay even know, the incapability of some teachers, yet either being overcome by their fair and flattering speeches, or prevailed on to gratify some interested friends of those men, commit their children to them, which is an error of like nature with that of the sick man, who to please some interested friends, forbears to send for a physician who might save his life by his skill, and employs a mountebank or quack, that quickly despatches him to another world. In the name of all

that is sacred, how can that man deserve the name of a father, who is more concerned to gratify others in their whims and requests, than to have his children well educated? Or who through the love of money and fear of expense, employs men that are of no worth, thereby purchasing for his sons and daughters *ignorance at a cheap rate.* It was a fine reply which Aristippus gave to a father of this cast, when he was asked what he would take to teach his child? A thousand drachmes, said Aristippus. The father exclaimed, *I can buy a slave for that sum!* Do so, said the philosopher, and you shall instead of *one,* purchase *two slaves* for thy money; *him that you buy for one. and thy son for another.*"

The preceding remarks are confirmed by every day's experience. We see the fatal consequences of mismanagement in those youth who have been ill-brought up and worse taught; who are driven into every species of vice by the headlong fury of their passions, and who are bringing upon themselves and their best friends deep sorrow and disgrace.

EXTRACTS FROM A LECTURE ON THE STUDY OF CHARACTER.

BY ALEXANDER KINMONT.

NO. II.

THERE are two classes of characters prevalent among men, and these I shall beg leave to call the *natural* class, and the *artificial.* Within the natural class, I would comprehend all the characters, which seem to have been originally intended by Nature herself (if I may so say) for the purpose of perfecting the human species. Within this class, there may be found accordingly a vast variety of characters, which are apparently designed mutually to improve and strengthen each other by their combinations in society. In this way, provision is made that man may live a social being; for he is obliged to look for those talents in their *perfection* in others, of which he himself possesses but the *rudiments.* On the other hand, he himself is furnished with certain gifts and endowments in greater perfection than others, and is enabled in his turn to impart that aid which others need. It is not necessary, then, to suppose that the

diversity of talents and dispositions among mankind, is the consequence of any deterioration or degradation of their nature, which has left to some the unbroken integrity of their characters, while it has impaired and enfeebled that of others. This variety might have existed, and perhaps also in greater strength and beauty, although man had never sinned, or never fallen. I recognize then, you perceive, (although I put no stress upon it as a theory) a certain fixed diversity of character, grounded in nature itself, and independent of any act of man. And this variety of character, I term *natural*, or *created;* for, I am inclined to regard it as such, and consequently *good*, because we are not at liberty to think of it otherwise, since it comes from God. Of this natural class of characters, then, we say, *nascitur non fit*, it is created, not made. And if we are required to give a still farther definition of it, we would refer for an explanation of our meaning (not a definition) to those two fixed and permanent classes of human beings, males and females. No one can reflect on the nearly approaching equality in respect to the number of these two,—so nearly approaching that I suspect, if all the facts were ascertained, it would be found to be a perfect equality,—I say no one can reflect on the fact, that the two sexes have proceeded *pari passu* in respect to number, from the remotest generations to the present times, without being astonished at the uniformity as well as wisdom of that Divine Economy which rules and regulates all the affairs of men. But astonishment will not be the only sentiment which the consideration of this subject will excite; for, catching at this point, a glimpse of the plan of divine operations, and grounding our reasonings on that unity and simplicity of design, which are found to be the constant characteristics of all the works of Nature, we may very fairly conclude, that, besides the perpetuation of these two classes of human beings, the two sexes, there are also other classes, although less prominently marked and less visible, yet distinctively different, fixed, constant and unchangeable in their orders—reproduced from age to age in perpetual and successive generations. Should this be so, and you see the suggestion is grounded on a very remarkable analogy,—a similar fact in regard to the two sexes,—we have a foundation for that variety of character on which a teacher has to fix his attention, not insignificant and obscure, but divine and illustrious. He that made man at first has said, let such and such classes, brotherhoods and varieties of men exist; and let them be for the aid and not for the injury of one another; let them help, but let them not oppress one another; I have placed them here on earth, not that they should claim superiority over each other, or dispute about pre-eminence, but that each one of them should choose to be the servant of the whole, and to employ his specific endowments for that end. Observe, I still place no stress on this as a

theory; I only suppose it may be a very fair way of accounting (till a better is produced) for that *natural* diversity of characters, which appears among men, without supposing that any one class of the species was destined to take the lead, or to keep the others in subjection. It is an extension of the same principle, differently modified, which we see in the fact of the two sexes. No sensible person ever thinks that either of the sexes was intended to hold superiority over the other, or ever talks of the pre-eminence of the one above the other; but he sees that they are *created* differently, and that the characters of both are improved, dignified and exalted by the union of their harmonious and respective qualities. Here is to be seen the social affection of the human race in its full and most beautiful form, but from thence, as a centre, the principle is extended probably throughout the whole of human society.

> Hail wedded Love, mysterious Law,—by thee
> Relations dear, and all the charities
> Of father, son and brother first were known.

In a word, for I will not dwell on a theory, it appears not to be in opposition to the fixed analogies of nature to suppose, that there are certain well defined and established classes of men perpetuated from one age to another, for the sake of preserving unimpared and unaltered, the grand and majestic features of universal humanity, as well as maintaining a mutual dependence, and connection between all its distinct and individual parts. On this principle, we would account for that easy recognition of character at first sight, which is so remarkable. An unknown individual is presented to us; if he is not a hypocrite, we comprehend his natural character almost instantly, and the reason may be, that he is one of a *natural class*, which we have before studied, perhaps unconsciously. From this same cause, it may happen, that, in a strange place, so many faces often strike us as familiar, which we had never seen before,—so much so, that we sometimes stop short in a crowded street, and reflect whether some persons who have just passed are not actually known to us; sometimes we fancy they have occured to us in a dream; but our very dreams reflect those fixed varieties of human character, which, in every country and region, where man inhabits, are to be found. *Par nobile fratrum*, I have often said to myself on meeting with a new acquaintance, and finding his very *form* and counterpart already in my memory's catalogue. These facts lie within the recognition of all.

But, not to discuss this subject any longer in the spirit of a theory:—What duty do these acknowledged classes of character impose on a teacher? Undoubtedly the duty first of all, of studying them, not in the spirit of a vain theory, but for an end

of practical good. And in conducting this study, it will be necessary for him, first of all, to distinguish the *natural* classes of character, I mean such as are *created*, or, in other words, as exist, from the will of the Creator, which he has seen and sees to be good for the human race, and which together are perfective of its beauty and its strength and its end. Under the idea, then, of natural classes of character, I do not admit blemish, stain, taint or imperfections of any kind; they are good, superlatively good. God made them. What then? am I one of those who consider man's nature immaculate? Very far from it, but the stains, the spots, the ingrainings of sin, (if you will call it such,) I consider artificial, not natural But are not such defects, blemishes and imperfections *on* the minds of children, nay, very deeply *in* them, from birth? Yes, but they are *artificial* still; (observe, I use the word *artificial* in this sense) they have been there I mean from acts of men; they are not the imprints of the fingers of God there; of course, no one believes they are; and I am not broaching now any new theory: I only wish to fix the attention on the fact, that the artificial acts of man's evil in the first place deform his own constitution, (mental and physical) and afterwards that constitution, so deformed or debased, is transmitted to his offspring. I believe this is a fact on which all men are agreed; but theologians speak of it in one way, physiologists in another. The schoolmaster has nothing to do with either of them, but with the fact only; for, it is a fact, an undoubted one, that all the perversions which have been wrought on our nature by our fathers, grandfathers and remote progenitors to Adam upwards, have fallen with an accumulated and deteriorating influence on all of us who are alive this day.

> Ætas parentum pejor avis tulit
> Nos nequiores, mox daturos
> Progeniem vitiosiorem.

A clear proof that it requires nothing short of the omnipotence of Divinity to redeem and regenerate human nature. But this remark is foreign.

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And here it is necessary to guard what has been advanced from all possible misconstruction. I beg, then, it may be remembered, that we recognize the varieties of character which are artificial, as well as natural. The varieties which are natural, I esteem to be of God, and therefore good. The varieties, which are artificial, I look upon, as of men, and superinduced by their acts on the original natural substratum, and this superinduction of an additional character is not always good, or such as one would wish to see remain. The natural good propensities of mankind

have often received such a direction from education and been made to run in such a current, as are far from beneficial. Habits thereby of disorder have been contracted, which, continuing through the life of the individual, have, as it were, unfixed the order, the benevolent order of his constitution, and transmitted it so to his posterity. This is so plain a fact that I wonder any one should deny it. The truth is, that gross moral depravity, particularly in regard to that sacred department of our nature, which was destined to be the source of man's purest enjoyments and the parent fountain of all the sweet and endearing charities of human life,—wilful and habitual depravity, I say,—is certain in the long run to enfeeble and impair the mental faculties, if not in the individual himself, *yet certainly in his offspring.* Many a fair and beautiful intellect, which might otherwise have been transmitted from father to son, and from son to grandson, in successive generations, has thus been overthrown and laid in ruins. It is astonishing, that historians, who are so fond of tracing the causes of the overthrow of the Roman Empire, have so seldom alluded to this cause, which was the cause of all other causes.—It is this which has laid many a proud city low even with the ground, and overspread the face of many a land with the moral ruins and desolations of states and kingdoms, once vigorous and flourishing. It was the cause of the overthrow of the Roman Empire, and of the empire of many a noble mind. Tacitus, the most profound of the Roman historians, was well aware of this fact.*—Unwholesome vices, then, modify very greatly the natural characters of men;—I do not say that the vice itself is communicated—that the moral guilt is communicated; but, that the form or alteration of the mental or physical constitution, which the moral guilt produces,—(I mean, when habitual,)—is transmitted; it is not the sin (to speak in the language of theology) but the sad and foul work, which sin has made, which descends to posterity; and it not only enfeebles the intellect, but also sometimes impairs the powers of moral perception. Now, when I spoke of being careful of hurting the varieties of mind, which are of nature, I certainly did not allude to those sad, those melancholy varieties. But yet there is a duty which a teacher owes to them, and a very delicate and important one;—it is here, where all minds call more or less for "the kind hand of an assiduous care;" it is here, where all our weeding is to be done. For, all our forefathers, good as they may have been, have, I am afraid, stepped so seriously out of the order of their nature, as to have entailed very imperfect and defaced natural forms on all of us;—I speak of those forms, through which the mind immedi-

* I refer the reader to his admirable treatise on the Manners of the Germans, where he will find the subject represented.

ately manifests itself in the body. Each one may follow his own theory on the subject;—I speak of the *naked fact;*—that our mental forms have been all more or less impaired by the disorders of preceding generations; (some more, some less.) This should teach us tenderness to all children and youths, who are similarly circumstanced; they are sharers in the common calamity in which we are all involved. It is to this point, then, where really the most valuable and most useful part of a teacher's labors is to be devoted; it is here, where he acts in the character of a kind of mental physician; he sees there is some inherent defect in the mind of the pupil; he is careful, above all things, in the first place, not to suffer it to become a ground of reproach; a mark for juvenile scorn to point the finger at. This is a very important matter; and it is even a proper part of moral education to teach his young compeers to aid and encourage one less favored by nature than themselves. This is to bring good out of this entailed evil; it is to excite proper, generous and good human feelings to an object of misfortune; and perhaps it is a misfortune only in one part of the character,—all the rest may be sound and good. Suppose then a teacher to meet with such a boy, we shall say an extremely dull one. We shall suppose the defect to be in the intellect. When it is there only, it is certainly in the least vital moral part;—the intellect can be healed much easier than the heart—that "part aye which makes us right or wrong." Suppose then the intellect of a boy is very feeble;—the teacher should contrive, if possible, to spend a little extra time on him; to put a question to him now and then by himself; to teach him something privately, which he intends afterwards to teach the class; to instruct him then and the class together; he is able then to answer as well as they are, becomes encouraged, looks up, and catches a little of the glee that is going. This is good, and shows that he is in a mending state. With such a youth also, it is an important point never to allow him to lag in the rear of a class, but rather to let him drop without his knowing it (or his parents either) to a class below, in which he will be a leader for the time, and begin to gain confidence in his own powers. If he acquires confidence in his powers, your point is gained, you have saved the boy; for, so soon as he feels he has powers, he uses them, and with use they are enlarged and strengthened. I do not pretend to convey any new information in all this, I know you all practice such humane artifices, perhaps much wiser ones; but it is useful nevertheless to speak on such matters.

Certainly, the most useful part of our labors is that, in which we succeed in making a dull boy think; we add one mind more to human society; and perhaps, if a wise teacher ever allows himself to feel any partialities at all, it is for those dull pupils, whom he has succeeded in rendering intelligent. He rejoices

over every such instance of success, with a feeling akin to that which angels experience, when a sinner has repented; and in the excess of his joy he hardly thinks for the time of those other valiant youths who have needed little more of his attention than to be shown the way. But such youths never fail to receive the admiration of strangers, and therefore they are always more than duly applauded and excited by applause. Premiums, if premiums are distributed, belong exclusively to them; the race is here always to the swift, the victory to the strong. But those unaspiring, disheartened youths—what is their reward, who from a kind of natural lameness have been unable to run; from natural imbecility have been unfit to contend; what flattering smiles of notice or of approbation fall to their share? None—from ignorant or unthinking spectators. Who then shall cheer them, or intellectually befriend them unless their teacher? and I know, I do but justice to the feelings of my professional brethren generally, when I say that to a teacher such youths are often dearer than almost all his school besides, if he has succeeded in curing in any degree their mental defect, or *they* have showed any disposition to be cured: in such case they are regarded by him as sons restored; as those who were *dead* and are alive again, who were *lost* and now are alive.

SCHOOL ETHICS.

BY THE REV. WILLIAM H. M'GUFFEY.

Much has been said, of late, on the subject of *moral* education. This may be taken as one of the "signs of the times." Hitherto, the object of instruction has been too exclusively the improvement of the understanding, to the neglect of the better qualities of the heart.

This reform will be likely to meet with but little opposition in theory, on the part of either parents or teachers; or even of the community at large. But in practice, it is to be feared, it may have to encounter that opposition which is arrayed against every species of innovation without regard to the difference between improvements and those changes which are not improvements.

Teachers may be reluctant to introduce an exercise, that will require them to reduce to a scientific form, that knowledge which has so long been familiar to them, in the character of practical

precepts. Their perfect understanding of moral rules, and their high sense of moral obligation, will make them unwilling to put the first to the test of speculation, or analysis; and make them impatient of that questioning of the second, which must always arise in the free discussion of the class-room. Their reasonings will not always be as clear as their convictions; and the consequent failure to impress the minds of their pupils as deeply as their own, with the solemn sanctions of moral law, cannot fail to produce at first, a hesitancy, as to the propriety of a course which seems to be promotive only of scepticism.

But a little perseverance will show, that this is only a deceptive appearance. Practice will soon enable them to succeed in finding adequate expressions for all their ideas; convincing arguments in defence of their doctrines, and a sufficient antidote for that lurking scepticism, which their incipient attempts had not originated, but only developed in the minds of their pupils.

Parents too, through inadvertence, may be found practically to oppose the study of "school ethics," on the ground that it will interfere with that which to them may appear a more important acquisition.

They will probably be found expressing some dissatisfaction with the teacher who employs a part of the day in instructing the boys in such questions as involve the characteristic difference between the faculties of brutes and the mind of man. They might, in some instances, prefer that their sons should devote more time in studying the relations of numbers; and less in the study of those relations that exist between them and their schoolfellows, and out of which grow a great variety of most important duties, strikingly analogous to those which are, at once, most obligatory and most important in civil society.

But the instructer, who shall, even for a short time, judiciously persevere in imparting to his pupils a knowledge of the *principles* upon which their "school duties" depend, will most certainly overcome all opposition on the part of every judicious and discerning parent. He will soon be able to demonstrate, that, in this way, more time will be saved from the exercise of harsh discipline, than will be sufficient for an intelligent acquisition of the first principles of ethical philosophy.

Children *are* governed by *moral* reasons, even when *corporal* punishments are resorted to. The latter can only hold in abeyance the wayward tendencies of youth, until rational motives can be brought to bear upon the understanding and the heart. There would be much less occasion for a resort to corporal inflictions, if moral culture was better understood and more correctly appreciated.

The advantages resulting from an intelligent and practical inculcation of moral principles, even in our primary shoools,

would be incalculable. I do not here mean instruction given in the principles of ethics, as a science merely; but the application of them to the art of regulating, with propriety, the intercourse of the pupils with their instructers and with each other.

Why could not the *reason* of every requisition be pointed out to the pupils? Why could not the *principle* be stated, when the *law* is promulged? Why might not the uniform coincidence of duty and interest be clearly exhibited, so as to remove all suspicion of arbitrary control, in the exercise of those functions which devolve upon the teacher? Unless this is done, there will be a constant competition between privilege and authority; the pupils looking upon every requisition as an infringement of their rights; and the teacher regarding every act, not authorized by the rules, (though it may not have been forbidden) as an encroachment upon his prerogative. The boys will try how much they may safely violate the rules: and the instructer, how far he may venture to extend their principles beyond their letter; and thus the whole will degenerate into a system of mutual strife and coercion.

Tell a boy, in tones of authority, that he *must*, and *shall* abstain from whispering, for example, and he will be likely to feel some additional motive to continue the practice, from the manner in which the prohibition was expressed. But show him that it is reasonable to grant a request, when properly made; and that it is not only proper, but requisite that you should make such a request; and that it would be proper and right that he should be silent in school, even if you had not requested it, *because* whispering disturbs you and annoys his schoolmates, while it is of almost no advantage, nor even gratification to him: and you will rarely have occasion to repeat the argument—especially if you succeed in producing conviction, as you advance with the reasonings above suggested.

But, to take a more general principle: why cannot children be made to comprehend the difference between coercion and motive? Tell them, that a cat, or a dog may be governed by fear; but that boys and girls ought to be influenced by principle. Say to them, "you cannot convince a mere animal that it has done wrong, so that it will be sorry, and not do so again. But children know the difference between right and wrong; and may, and ought to be persuaded to leave off their bad habits, not so much from fear of punishment, as because they are wrong."

Nothing weighs so much, with an ingenuous youth, as motives drawn from the dignity of his nature; except it be those arising from a sense of duty. He is thus put upon his honor; an appeal which is rarely made in vain. The complaint so generally, and what is worse, so justly made against American, and especially against western institutions, on the score of want of discipline,

will continue, and increase, until the *consciences* of the young are more systematically and directly appealed to, by those who have the care of their education.

Free governments cannot be maintained without *religion* among the people: nor can rational discipline be supported in our schools, without a high, and intelligent, and conscientious regard to duty on the part of those who are their inmates.

AMERICAN HISTORY FOR SCHOOLS.

It is a custom, in many parts of the western country, to use histories of England, Rome and Greece, as class-books, in the schools, almost to the exclusion of American history. This is a bad custom. Our youth, who, in a few years, will have the whole weight of the government upon their shoulders, should not be ignorant of the history of their country. They should possess full information about the origin, the nature, the cost and the value of the great inheritance, which is about to fall into their hands. They should be made familiar, in early life, with the pure models of public virtue, which illustrated the first days of the republic. It is also important, that they should study our history, in order to acquire that proper degree of national pride and that delicate sense of national honor, which are indispensable to an elightened, ardent and enduring patriotism.

It is not in the human heart to love a country of no character or distinction in the world, so well as one whose history is glorious and honorable. We love Poland the better, and feel more compassion for its fate, because it is the land of DeKalb and Koskiusko. In like manner, the whole world loves Greece—not for what she is, but for what she has been—not for her living, but for her dead—and will continue to love her and feel a kind of consanguinity to her, so long as her soil inurns the ashes of her ancient illustrious men. And wherever, over the wide world, we meet an honorable, generous-hearted Irishman, we cannot help feeling, that, apart from the virtues of the man, some little regard is justly due to the countryman of Grattan, of Moore, of Curran and of Emmet. We almost unconsciously transfer to the country itself—to its inhabitants—something of the admiration which we feel for its distinguisded citizens.

This disposition of the heart operates with increased force, in relation to one's own country. Let the reader analyze his

attachment to country, and he will find that the renown of that country adds not a little to the strength and fervency of this passion. He will find that pride of her high reputation—of her great names—and of every thing in her annals, that sheds lustre around national character, is intimately and indissolubly associated with the very idea of country. He will find indeed, that these, no less than physical nature and civil institutions, constitute country. He will find, that though we love our free institutions for their inestimable value, and for the rich fruits of liberty, security and prosperity, which they disperse over the whole country, he loves them yet more, for the glorious men who moulded them into their strength and beauty, and through many years of hard fought battles, in field and senate, exerted every nerve of body and all the energies of their great minds at the expense of ease and fortune, and at the peril of their lives, to sustain and defend them. As we venerate those men, on account of the rich inheritance they have transmitted to us, so we venerate the inheritance more highly, on account of the illustrious donors. By a very natural reaction in our feelings, the gift is made to confer honor upon the donors, and the honor of the donors to confer additional value upon their gift.

The history of our country should, therefore, be kept constantly before our youth. Whatever is great and noble in our annals—every thing of extraordinary merit in the conduct of our illustrious dead, whether distinguished in the field or by the less brilliant, though not less useful services of civil life, should be their frequent and familiar study. They should be taught to look up to these glorious models in early life, even as the young eagles are taught to gaze at the sun.

An intimate knowledge of our history, particularly of the character, services and sacrifices of our illustrious men, will produce a salutary moral influence upon our youth. The moral power which the lives and actions of great men exert over their countrymen in after ages, is too evident to require much illustration. If illustration of it were necessary, we might appeal to the sensibilities of the reader, in regard to that country, whose name more than that of any other, excites in men's minds, inteteresting and spirit-stirring historical recollections. Who can tell how much the recollections of her former greatnesss may have contributed to hasten the emancipation of that beautiful land from Turkish vassalage. No man of sensibility can doubt, that the remembrance of her ancient grandeur, visible through the long night of her servitude, in her mouldering ruins and relics, and glowing fresh in the pages of her orators and poets, must have had some influence in arousing her to a conflict with her oppressors. Could it have been otherwise? The enslaved degenerate Grecian, knowing what his country once was, must

have seen in every object around him a look of reproach. Must not his cheek have burned with shame, while he cringed and crouched to a Turkish master, on the very spot where Leonidas expired, and with the bones of that gallant hero reposing beneath his feet? What feelings must have filled his bosom, when in ploughing the old battle-fields of his country, he turned up the rusty weapons or mouldering bones of his fathers? Every sod that he turned up must have called him a "degenerate slave." Every thing around him must have reproached him with his shameful degeneracy. Every relic of former days; every classic vale and fountain; every leaf of ancient literature, and every trophy of former freedom, must have reproached him. There are no data, and from the nature of things, cannot be any, by which to measure the amount of the influence of feelings of this description, upon the modern Grecians. But to judge by our sensibilities on the subject, that influence must have been great. They could not have looked coldly on their past history. It must have kindled some enthusiasm in their bosoms. The contrast of present degradation with former greatness, must have awakened some of the spirit of their fathers. It may be, indeed, that it was the spirit-stirring recollections of what Greece once was, that broke the spell that had for ages bound her down in bondage—that it was the voice bursting from the tombs of her old heroes, orators, and poets, that awoke her from her trance of death, and nerved her with strength to burst the bonds of her sepulchre, and rise up into newness of life.

If such be the moral influence which the lives of illustrious men exert upon their countrymen in after times; if the glory and renown of national character add so much to the strength and fervency with which we love our country; if the examples of the past are such eloquent and impressive monitors to the future; if, through the history of their lives, we can hold converse with our illustrious dead, and feel that they are present in spirit, with us, exhorting us to follow the examples of their own pure patriotism, with a more impressive eloquence than can belong to mortal lips; then, surely, the memory of the bright names and noble achievements of our history, should be kept ever fresh and verdant in the hearts of our youth. It is a shame that the names of Marathon and Thermopylæ have more magic to stir the blood of an American youth, than have the names of Yorktown and Bunker's Hill. It is a shame, that the hearts of our children should kindle at the mention of Leonidas, Miltiades, and Epaminondas, while the names of Hale, and Prescott, and Warren, and Stark, and Pike, and Wooster, are strange names to them, with no more music in them than in common sounds.

We are induced to dwell a moment longer upon this topic, because we fear that many who have charge of the education of

youth, do not appreciate its importance. In our estimation, it is important. The glory of a nation is very far from being an empty name. It forms no mean portion of a nation's wealth, and no slight pledge of her safety. The usefulness of great men, if their memory be preserved, does not die with them. Koskiusko, it is said, aided Poland more, in her late struggle with Russia, by the power of his example, and the very magic of his name, than he did in his life by all his great services. His body was confined within a narrow grave, but his spirit filled all Poland. Living, he could only have been present in one place at a time—dead, he was present every where, at all times, inspiring all and encouraging all, with more than mortal influence.

The case would be similar in this country, if the memory of our history be kept fresh and green in the hearts of the people. In times of public danger, the memory of our departed patriots would animate their countrymen. They would feel and act, as if the spirits of the dead were hovering in the air around them, spectators of their actions. As they looked up to the broad stripes and bright stars of our ensign, waving above them, they would remember that it was the *shroud*, the winding sheet, of the gallant Lawrence, as he lay a corpse on the deck of the ship which he so bravely defended, and which with his dying breath, he charged his crew "never to give up." As they beheld the gorgeous standard of Great Britain, floating upon the breeze, their hearts would kindle with the recollection, that it was the *pillow* of the noble Pike, in his expiring moments—the insignia of his victory, upon which he laid his fainting head, and said, "I die contented." A thousand such touching and tender recollections would come thronging up into the memory, to excite and kindle in them a love of country. To this end, the History of our country should be made the constant school-book of the rising generation. They should study it till they catch its spirit. Let them open its pages, and look at all its bright names. Let them begin at the landing of the pilgrims—let them note every glorious occurrence from that time to this, whether civil or military—by land or sea: let them become familiar with every battle field, and with every hero who has fought or fallen upon them. Until they shall have done this, no history of a foreign country should be put into their hands.*

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* We know of no good school histories, especially American. Those in common use are very deficient. Some are too barren of incidents, others too diffuse; some give the most important events in a paragraph, others take pages to narrate what should be told in few words The style of some is harsh and rugged, of others, weak and dull. It is not every one who can write a good school history. It requires a man of genius; some one like Washington Irving, who can throw a charm about every subject he touches. The work of such a writer would very soon take the place of the histories by Goodrich, Hale, Webster, and others, whose compilations are very imperfect, and unnecessarily *decorated* with uncouth cuts or pictures, conveying neither historical nor geographical information.

ON MATHEMATICAL INSTRUCTION.

It is matter of general remark that mathematical studies do not yield that pleasure to the young, which the more intelligent and well inclined among them, derive from every other part of their education. If the opinions of a number of youths could be collected, at the period when their education is just completed, it would be found that, while nearly all profess to have derived pleasure from their classical pursuits, the very name of mathematics is an emblem of drudgery and annoyance. In saying this we are not speaking of those establishments, in which the choice of studies is so far left to the taste of each individual, that no one can have those feelings against any particular study, which arise from the remembrance of its having been forced upon them. Our remarks apply to the hundreds of schools with which the country is studded, where, in fact, the great majority of the educated portion of the community receive the knowledge which entitles them to take that title, in most of which something is taught under the name of mathematics, bearing much the same likeness to an exercise of reason that a table of logarithms does to Locke on the Understanding. Honorable exceptions are arising from day to day; and those who guide the remainder, will, if they are wise, look out in time, and see with what favorable eyes the world regards any well-regulated attempt to improve the system.—We propose in this article to make some remarks on the manner of teaching mathematics as it is, and as it ought to be taught.

A very erroneous idea prevails with regard to the object in view, in making mathematical studies a part of education. There are places in abundance where book-keeping is the great end of arithmetic, land-surveying and navigation of geometry and trigonometry. In some, a higher notion is cultivated; and in mechanics, astronomy, etc., is placed the ultimate use of such studies. These are all of the highest utility; and were they the sole end of mathematical learning, this last would well deserve to stand high among the branches of knowledge which have advanced civilization; but were this all, it must descend from the rank it holds in education. It is no sufficient argument for the introduction of such pursuits that their practical applications are of the highest utility to the public, and profitable to those who adopt them as a profession. The same holds of law, physic, or architecture, which, nevertheless, find no place among the studies of the young. It is considered enough, that the lawyer should commence his legal pursuits when his education in other respects is completed; and so would it be with him whose calling requires a knowledge of mathematics, were it not that an important end is

gained by their cultivation, which is quite independent of their practical utility,—viz. the exercise of the reasoning powers. It is well known, that mathematical demonstration has acquired the name of certain, on account of the simplicity and perfect admissibility of the principles assumed, and the strictly logical nature of the steps by which conclusions are deduced from these principles. The results are also, in many cases, matters of common experience, by the application of which the reasoning may be confirmed. The same species of logic is used in all inquiries after truth; but the broad distinction between mathematics and the rest, is, that the data or assumptions of the first are few, undeniable, and known to the student from the beginning; no question can be raised upon them which in any way affects the disposition to admit them, and they require no induction from facts which can be disputed. The student can then perceive more clearly in these studies, than in any others, what is reasoning, and what is hypothesis; he sails along a coast, of which all the points are well laid down, that he may be able to use the experience there gained, in future voyages of discovery.

The actual *quantity* of mathematics acquired by the generality of individuals is therefore of little importance, when compared with the *manner* in which it has been studied, at least as far as the great end, the improvement of the reasoning powers, is concerned. On looking at the question in all its lights, we might be tempted to say, let every one learn much and well; well, in order that the habits of mind acquired may be such as to act beneficially on other pursuits; much, in order to apply the results to mechanics, astronomy, optics, and many other ennobling sciences which can never be completely understood without them. But considering that the great majority of youths have not time to devote both to the subject and its applications, and cannot therefore hope to be able to attend scientifically to the different branches of natural philosophy, the next point is to secure a habit of reasoning in preference to the knowledge of a host of results. The latter is preferred in most of our schools, and for this reason, that ninety nine parents out of a hundred are more likely to ask their sons, How *many* books of Euclid have you read? How far have you got on in algebra? than—In what *manner* have you studied? Do you understand what you read? It is common enough for a boy to have acquired arithmetic by rule, six books of Euclid by rote, the greater part of Bonnycastle's Algebra by rule, and Plane Trigonometry in the same way, with just enough of the use of a table of logarithms to secure him against working any question with correctness. All this, if well learnt, would constitute a respectable portion of mathematical knowledge, and would enable an intelligent pupil, when the day arrives in which he begins to see the value of knowledge, to proceed in his studies without the

aid of a teacher. But if we proceed to examine the manner in which this is gained, we shall, in far too many cases, establish the truth of the following sketch, which we believe to be a fair representation of the manner in which mathematical science is taught to a great majority of those who commence this study.

The child learns from his nurse or his mother our method of representing numbers, by a plan of teaching which makes two symbols such as 16 and 25 nearly as independent of one another in his head, as the ideas attached to the words 'book' and 'steam-engine.' When he arrives at school he is taught to *say* the table of enumeration, and then proceeds through a number of rules, that is, directions to put figures together written in a book, with names at the head of them such as multiplication, division, etc., which if he understand, it is well, but if not, nobody cares. Some of these rules are so unintelligible, that were it not for an example at length which usually accompanies them, they would be equivalent to as much Hebrew. As to the reasons for the rules, the pupil cannot trouble his head (to use a common term for that much avoided operation, *thinking*,) about them, not knowing whether there are any at all, or whether the rules themselves came from the moon, or are a constituent part of that wisdom of our ancestors about which he sometimes hears.

It has been suggested to teach the principles involved in the rules, and thus to render the pupil their master instead of their slave, but to this plan, independently of its being an innovation, there are grave objections. Many instructors, if placed in the temple of truth, would be obliged to ask, 'How shall I teach what I do not know?' Others would say, 'All I have to do at present is to look at the pupil's work, and compare it with the key which I have, locked up in my desk—should I begin teaching principles and all that, there would be no end of troublesome questions.' In this last idea is much of the secret of the system. It works well, whatever the pupils may do, because, like the grammar and dictionary instruction in Latin and Greek, it saves the *teacher* a world of trouble. We remember to have seen a rule-book of algebra which recommended itself to the masters, on the ground of saving them from being 'pestered with questions.' After the same manner are histories, geographies, grammars, and reading-books for schools, made nowadays, with a batch of questions at the foot of every page, in answer to which, for a full understanding of them, children have only to learn a line or two from the text by heart, and the teacher is thus saved a great deal of labor, and, we might add, the children also are not only saved the trouble of thinking, but, they uselessly spend their time.

But to return—the *sums* as they are called, when, after many a correction, they coincide with the master's key, are carefully copied into a book, each with *Qu.* at the beginning, and *Ans.* at

the end, with red ink lines in the places which taste points out, and this goes home at the vacation with the young gentleman, a triumphant proof of his progress, shewing the delighted parent that his hope is *in* 'Compound Multiplication,' or if he be a genius *in* 'Discount' or 'Barter.' This has been done in three years (we speak from knowledge,) which, considering that the last rules consist in dividing a sum of money into parts, and taking some of those parts, is not such bad progress. In this way is the pupil driven through some dozens of commercial rules, reducible on principle to three at most, and these unconnected, ill arranged, and in nine cases out of ten utterly useless to the person who knows them. Fractions are presented, both common and decimal, but so disguised that not the least likeness is apparent. Hence the rules must be repeated in such case, and thus in arithmetics appear three distinct rules headed as follows:—

Rule of Three.
Rule of Three in Fractions.
Rule of Three in Decimals.

These are applied, as before, mostly to commercial affairs, which we imagine are considered as forming a necessary preliminary to geometry, since the road to the Pons Asinorum is always made to lie through Agio and Banco, Interest and Discount, and the like. The final consequence is, that the pupil having worked unmeaning and useless questions by slatesfull for some four or five years, comes out master of a few methods, provided he knows what rule a question falls under, which is not always sure to be the case, for in all probability, the first application which it is necessary he should make will be a combination of more rules than one, and, therefore, not exactly to be solved by the rule in his book. And here he is fairly aground ; for not having any principles, the necessity of one step different from that laid down in the rule is a total extinguisher upon the success of his efforts. So much for the system of arithmetic, most appropriately called *cyphering*, since intellect goes for nothing throughout.

After the excellent preparation above described, such of the pupils as retain any power of comprehension, or have not been utterly bewildered in the labyrinths of cwts. and lbs. are made to commence geometry, or as it is called, *mathematics*. Here we must observe, in justice to the instructors, that they have not degraded the latter term by applying it to their figure-work, miscalled arithmetic. And here the form of demonstration is adopted. We may ask, how comes it that reasoning, utterly banished from arithmetic and algebra, preserved its place as an essential of geometry? We suspect it arose from the fact of the treatise of Euclid being found already established, and the disinclination to overturn any institution being so great, that this work preserved its place in

spite of its truth and beauty. Had it not been for this, we suspect that geometry would have consisted in calculating the areas of squares and triangles—in fact, that it would have been all contained in one of our practical works on mensuration. Even as it is, there are not wanting some contrivances to prevent the perfect mastery of reasoning. One is, to give the pupil a case of instruments, and let him spend his time in drawing figures, taking care that these shall consist of broad ink lines, to prevent his eye and hand from acquiring the incidental advantage of real accuracy. The propositions are also said by rote, for the convenience of those who find their memory in a better state than their reason. Many a youth who can *say* the first book of Euclid, cannot say whether it would or would not do equally well to reverse the order of all the propositions. Great attention is paid to the phraseology of the book. The never-ending reiteration of Simson's Euclid is the very cream of the matter. But the prime feature of the system, though now somewhat obliterated, was the necessity of recollecting the numbers of all the propositions; for it could clearly be of no advantage to know, that three angles of a triangle are equal to two right angles, unless it was also known that this is the thirty-second of the first book. There seems to be a magic in numbers, which no one can withstand, from Leibnitz, who proposed to convert the king of China to Christianity, by means of the binary arithmetic, to the mathematical master of a country school, who measures his pupils' conviction of geometrical truths by their power of recollecting the order in which they come. In addition, it must be observed, that the more difficult parts of the system are, like the rest, said or sung after the manner of schoolboys, without the least elucidation. The fifth book, which, though defended by many on account of its superior rigor, is pretty generally admitted to be very difficult, if not absolutely unintelligible to the young, shares the same fate. If geometry is at all connected with algebra, it is by means of false analogies and such jargon as that the algebraical theorem $(a+b)^2 = a^2 + 2ab + b^2$ proves the fourth proposition of the second book and why? because a^2 or *a multiplied by a* is *called* the square of *a*, and *a b* the *rectangle* of *a* and *b*, etc.! Under these circumstances, the inquisitors who condemned Galileo would not much object to our geometry, seeing that such reasoning might be made as effectual in proving the stability of the earth, as the arguments of that great man were in overturning it.

We now come to the method of teaching algebra, with regard to which, all that has been already asserted in speaking of arithmetic, holds to its full extent. But as the former subject holds a higher rank than the latter, it would be undignified not to teach it with some defects peculiarly its own. If arithmetic were unintelligible, algebra is made to render that obscure which before

was easy. The latter may be divided into two parts; the first containing merely universal arithmetic, that is, calculations leading to theorems which are equally true for classes of numbers. To investigate these, universal numbers are introduced, represented by letters, for which, when the process is finished, any numbers may be substituted which are consistent with the conditions of the problem. The second and more extensive branch takes its rise in a peculiarity which distinguishes algebra from all other sciences, *viz.* that when a problem is impossible, or admits an infinite number of solutions, or has been misunderstood in applying algebraical reasoning, the solution itself, instead of being rational and consistent, points out the error by appearing in one of the forms $-a\sqrt{-a}$ $\frac{a}{0}$ $\frac{0}{0}$ and others which the algebraist will immediately recognise. These symbols are contradictory and absurd in their nature, yet, by carefully observing the problems in which they occur, it has been made apparent, that each of them belongs to one particular species of mistake and to no others. Hence the solution itself points out the error and the mode of correcting it, and these symbols take their place by the side of those in which no contradiction occurs, and can be used with certainty, and, by those who know their meaning, without confusion of ideas. In employing them it is sometimes necessary to extend the signification of common terms to avoid separating analogous cases and multiplying definitions. It is plain that this refined branch of the science should not be the first taught, but that the pupil should be led, in the track of invention, to its several parts, so as to arrive at each at the precise moment when he can understand its origin and use. A contrary course will ensure years of travelling in the dark, besides the certainty of accustoming the young mind to implicit belief in apparently contradictory propositions. But as if this were to be desired, we find the most elementary parts of algebra crowded with numbers which are to be subtracted from nothing, the results of which are to be added to and multiplied by similar numbers, for in no other sense can the pupil in that stage of his progress interpret the symbols which are put before him. This is on the supposition that he attempts to interpret them at all, about which no great concern is manifested. Thus, in Bonnycastle's Algebra (the school abridgment) we find the following definition:

"— *Minus*, the sign of substraction, signifies that the latter of the two quantities *between which* it is placed, must be subtracted from the former." Six pages do not elapse, before we find the pupil directed to add $+ 3xy$ to $- 2x$.

It may be said, that pupils raise no objections. This is the most fatal argument that could be adduced. We know well that pupils always receive implicitly what their masters tell them, and

why is it that they are led to the study of Mathematics? Precisely that they may learn to raise objections, and how to raise them in the proper place, when false logic and absurd definitions make objections desirable. To make him turn a mill is not the way to restore sight to a blind horse, nor will a routine of unintelligible or contradictory propositions develop the powers of the mind.

As in arithmetic, so in algebra, there is no reasoning, but all is rule and work. Nay, even the instructor himself is not supposed to possess this faculty, since to all the works of algebra, a key is published, containing literatim the solutions of all the questions, simple and otherwise, and it is well known that no similar work will succeed without such an accompaniment. In the key to Bonnycastle's Algebra we find $a - x$ multiplied at length by itself, for fear the instructor should slip; also the solutions of the equation $4 - 9x = 14 - 11x$, and many other such.

Such is a general outline of a course of elementary mathematics which was universal, and is still too general. We do not mean to charge every place of education with every one of these absurdities. It would be monstrous to suppose that, however universal the prejudice may be against reasoning, all should have adopted exactly the same method of keeping it out of the way of boys. We proceed to offer some suggestions as to the manner in which this system should be improved, in doing which, we cannot assume the tone of certainty in which we have hitherto proceeded. All that has been stated hitherto is notorious fact; we now come from matter of evidence to questions of opinion, knowing that it is more easy to pull down than to set up, though feeling convinced that the following methods will be found more profitable than those which we have described.

It is useless to present reasoning in any shape until the language used is perfectly familiar. No one can learn new words and comprehend new combinations of words at the same time. Hence a perfect acquaintance with the English sentence is the first thing to be taught. In this knowledge boys are usually deficient. They know, it is true, how to name each part of speech; but they have no acquaintance with that more general part of grammar which is the foundation of the forms of logic. As an example, no mistake is more common than concluding the converse of a proposition to be the same thing as the proposition itself in every case where the terms are new or complicated. Thus in commencing geometry they suppose that 'all equilateral triangles are equiangular,' proves that all equiangular triangles are equilateral. These errors should be guarded against beforehand, by exercising the pupil in simple deductions, such as are to be found in every syllogism, taking care that all the terms used have reference to objects with which they are familiar. It should be illustrated to them that the truth of an argument depends on two distinct con-

siderations, the truth of the premises, and the manner in which the conclusion is deduced from them. They should be made to see the difference between a fact and a deduction from two or more, and also that good reasoning may be instituted upon data which are imaginary, such as the definition of a point and a line in Euclid. It is much to be regretted that no book exists in our language which can be recommended to children as a direct exercise of thought on subjects with which they are familiar. He who shall supply this desideratum will deserve more than the present age will be willing to allow, but may safely trust his fame to succeeding generations. For want of such a previous exercise the boy has to contend with two difficulties at once, new things and new methods; and education is not what it should be, a search after that which is not known, by the light of that which is. We proceed to the study of arithmetic.

The method of numeration should be clearly explained and illustrated by reference to other systems besides the decimal. By the use of counters or any similar mechanical means, the pupil would readily perceive the use and advantage of giving to figures a local value. The explanation of the four principal rules would then be easy, but in learning them for the first time the pupil should not be allowed to make use of the abbreviations which will afterwards be convenient for practice, and which all consist in the omission of cyphers. The arithmetic of concrete quantity would furnish abundant illustration of these rules, since the principles of all parts of the science are the same. The rule for finding the greatest common measure of two numbers will supply an example of logical argument, which should be repeated on several distinct examples. In fact, the learner should accustom himself to apply to every case those principles of reasoning which in algebra are generalized by the application of universal symbols for numbers. He will thus smooth the road to the latter science, which will present only one new feature at first. In teaching fractions, a perfectly correct notion of their meaning should be given, illustrated by examples taken from concrete quantities. Distinct things should not be confounded because they have the same names. The multiplication and division of fractions is an example. Strictly speaking, the definitions given of these words can apply only to whole numbers, or to a whole number and a fraction; the name is extended *after* that operation is discovered, which it will be necessary to substitute when fractions take the place of whole numbers in a problem, and not till then, should the student be allowed to use the terms as applied to both sorts of quantity. The transition to decimal fractions is simple and obvious; but the pupil, before he is permitted to change the notation, should be accustomed to work questions contained in decimal fractions expressed in the common way of representing

all fractions. The reduction of any fraction to a decimal will lead to the notion of what is called a circulating decimal, which is all that the pupil requires, as the rules may very safely be deferred until he understands the nature of a geometric series.

The commercial rules are simple applications of the very first principles. They may be introduced as examples of the others, and thus many long and distinct processes found in all the books will be reduced to two or three. We have not space to enter into further detail; the following remarks will close this part of the subject.

The object of the master ought to be to make his pupil understand the process before him. The latter ought therefore to be questioned on every part of his work, and encouraged to mention all the difficulties which have occurred to him. Above all, the boy ought never to be suffered to imagine that he is stupid, because he does not immediately see what is put before him. Teachers do not sufficiently bear in mind, that their pupils are learning to use faculties, with regard to which, were it not for instruction, all would be nearly on a level. To discourage a beginner, by making him fancy himself beneath the rest of his species, is the surest way of losing time and trouble. That inattention or negligence should meet with reproof is undeniable, but this should not come in such a form as to dishearten the well disposed, or to give the indifferent pupil an excuse for making no progress, by laying the blame on his faculties, and saying he has no head for arithmetic.—Numerical exactness is of the utmost importance, and will be sooner arrived at by the pupil who understands the principles, than by any other.

The study of geometry should, in our opinion, not be deferred one moment later than is absolutely necessary. Many of the names here are new, and the beginner should, be made very familiar with them, before he encounters the difficulties of a demonstration. This might be attained, by making him previously acquainted with the leading facts of the first three books of Euclid. It is easy to give ocular demonstration of them all, and this, while it fixes the terms in the memory, will excite curiosity, and give an idea of the utility of the science. Much depends on the manner in which a study is introduced, and the commencement of Euclid's Elements is not calculated to afford a favorable idea. It consists of a number of definitions and axioms, some of which are far from self-evident, and begins with three troublesome propositions, showing that from the greater of two lines a part may be cut off equal to the less. This may be necessary to the received standard of geometrical rigor, but the beginner cannot enter into this refinement. And in fact, the order of the propositions is not necessary to correct reasoning. This consists in forming the conclusions rightly from the premises, no matter what these last

may be. It would not be contrary to good logic, to assume the whole of the first book of Euclid, and from it to prove the second, provided that afterwards the first book were proved, without the necessity of taking for granted any proposition in the second. The argument, or collection of arguments, would then stand thus:—

If the first book be true, the second is true.

But the first book is true.

Therefore the second is true.

The order in which the premises come, does not affect the soundness of the conclusion, provided that the pupil understands, that the conclusion depends equally on the premises and the reasoning grounded upon them, which are two distinct things, an error in one not necessarily affecting the other, he is perfectly safe, and takes a view of the process of reasoning not generally given to the young. We should then recommend the following principles in teaching geometry:—

Never to state a definition, without giving ocular demonstration, of one or more facts connected with the term employed.

To defer every axiom, until that point is arrived at, where it becomes necessary.

To impress upon the mind of the pupil, that the reasoning is not affected by the assumption of an axiom to be proved afterwards, provided the proof of it is independent of the proposition which it was used in proving, and its consequences.

To accustom the beginner to retrace his steps, and going backwards from any proposition, to continue the chain, until he arrives at the point which he set out by assuming.

To supply a proof that 'all right angles are equal,' and to deduce the axiom on which Euclid grounds the theory of parallels, from this more simple and obvious one, viz. 'through a given point, not more than one parallel can be drawn to a given straight line.'

In order to accustom the pupil to correct statement of propositions, he should be made to write all that he reads. But here is a probability that he will trust entirely to the book. This may be prevented by requiring him to use numerals instead of letters throughout, and to arrange the whole in the following manner. Let a sheet of paper have two vertical columns, ruled on the left, and let the whole enunciation, construction, and demonstration of the problem be divided into distinct paragraphs, each containing only one assertion. Number these paragraphs in the first ruled column, and, in the second, opposite to each paragraph, enter the numbers of the preceding ones from which it follows. Where a previous proposition, or an axiom is required, write its enunciation at the end, with a letter before it, and enter that letter opposite to the paragraph in which it is assumed. If the pupil does this

correctly, the instructor may be well asssurred that he understands the proposition.

In the application of algebraical symbols to geometry, misconceptions usually prevail, which are countenanced by the looseness of expression of many elementary works. They are mostly founded upon the analogy existing between the algebraical expression $a \times a$, or a^2, called a square, and the geometrical square described upon the line which contains a units. Against this confusion of terms the teacher must be on his guard, and should carefully avoid that symbolical notation recommended in some books, by which $A\,B^2$ is made to stand for the square described on $A\,B$. If a short symbol for this be used it might be $\boxed{AB}$, and the necessity of proving that the number of $\boxed{1}$ is contained in $\boxed{a}$ is $a \times a$, would not be concealed under a *petitio principii*.

With regard to the fifth book of the Elements, we recommend the teacher to substitute for it the common arithmetical notions of proportion.* Admitting that this is not so exact as the method of Euclid, still, a less rigorous but intelligible process, is better than a perfect method, which cannot be understood by the great majority of learners. The sixth book would thus become perfectly intelligible.

It would much benefit the pupil if solid geometry were introduced at a more early period. There is nothing in the elementary propositions which requires more than the first book of Euclid; and by a judicious use of the *real* figures instead of perspective drawings, the subject might be amazingly simplified.

We now come to the subject of algebra, regretting that the limits of this article will not permit us to discuss the subject upon the scale which it deserves. The great drawback to the proper attainment of this science is the miserable previous instruction in arithmetic. When this defect is remedied, and not till then, can we expect any better results. The four primary rules are, in principle, only extensions of those of arithmetic, though, taught as they are, very little resemblance appears. It is the practice also, not to let the pupil proceed to the principles of equations, until he can work questions in all the previous rules, of a nature which very rarely occur in practice. To the unintelligible way in which the negative sign is used, we have already alluded. We proceed to explain our views as to the manner of proceeding.

The new symbols of algebra should not be all explained to the student at once. He should be led from the full to the abridged notation, in the same manner as those were, who first adopted the latter. For example, at this period he should use *aa*, *aaa*, etc.,

* For an excellent exposition of Ratio and Proportion, we refer the reader to Day's Algebra.

and not a^2 a_3, and should continue to do this until there is no fear of that confusion of 2 a and a^2, 3 a and a^3, etc. which perpetually occurs. Whenever any new symbol is introduced, not a step should be made until it has been rendered familiar by finding its arithmetical value in particular cases. This indeed is the first exercise; algebraical expressions increasing in complexity are given, and also certain values for the letters, and the student is left to find the corresponding arithmetical value of the expression. Whenever a negative result occurs it should be thrown aside as an impossibility, the pupil being told at the same time that use will be afterwards made of such expressions, when he can understand what they mean in the solution of a problem. The leading principles of the solution of equations of the first degree might then be easily established, and applied to some numerical equation. The four rules should follow, the principles being previously explained and all negative results avoided. The student is then in possession of the means of solving an equation of the first degree in which some of the given quantities are literal, and may be supplied with examples a little more likely to aid his future studies, than what may be denominated algebraic conundrums.

At this stage of his progress the pupil should be set to work a problem in which a negative result occurs. It should then be pointed out to him that there is a misconception of the problem itself, and the manner of rectifying that error will shew in the course of several examples, what is the meaning of the negative answer. At the same time it will be easy to explain by examples the nature of the wrong suppositions which lead to results of the form $\frac{a}{0}$ and $\frac{0}{0}$. He should then examine for himself what change is produced in a process which sets out with some assumption, as $b-a$, when this has been incorrectly written for $a-b$. By comparing the true and false processes he will deduce the rules according to which negative quantities must be treated, in order that their introduction may not affect the soundness of the conclusion. He is thus placed in the same condition, as to results, with the pupil who has pursued the common method, with this difference, however, that he can explain conclusions which the other cannot, and has never believed that, $a-b$ meaning a diminished by b, there can be such a thing as $-a$, or a quantity *less than nothing*.

The view which is generally taken of expressions of the first and second degree is too confined for the future purposes of the mathematical student. It is this: what values of x will make the expressions $ax-b$, ax^2-bx+c, etc., equal to nothing; whereas it is necessary to inquire what values of x make these expressions positive, negative, or nothing. All that is learnt, appears to have

no higher view than enabling the student to solve the petty problems which we have hinted at, and not to simplify the higher parts of the science. This is too much the fault of the education of our schools in general. It is not recollected that they cannot expect to make learned men; but they may make good learners, and at the same time produce such a desire for knowledge as shall lead the individual to devote himself to study. The great mistake lies in a notion that they are to teach the greatest possible number of bare facts, before the pupil arrives at the age of sixteen: whether he will leave school, with the desire of adding one more bit of knowledge to his stock, or with the power to do so if he has the will, does not seem to be considered of any importance. Again we call upon all who still adhere to the old system, to reflect a little on their own interest. The number of new methods of teaching proposed every day, shows the existence of a general feeling that some change is requisite. And let Institutions of learning recollect that, the demand existing, the question is not whether they will supply what is asked for, or something else, but whether the public must come to them, or go elsewhere.

ANALECTA.

In the course of our reading, we have marked many passages in the works of time-sanctioned and celebrated writers, which we shall occasionally lay before our readers. They will deserve the serious reflection of parents and educators.

Prudentius says, all wholesome discipline is thought a hardship by a boy.—*Omnis disciplina gravis est puero.*

Dr. Knox, in his treatise on Liberal Education, remarks, that on a truly ingenuous mind, praise and shame will at all times act as sufficient rewards and punishments. On the intermediate sorts, those who are neither remarkable for tenderness of feeling nor ganerosity of nature, and who constitute the common herd and the greater part, I with regret assert, that it will be sometimes indispensably necessary to inflict corporal punishment, *To inveigh against it is no new topic.* Long and constant experience has decided on its absolute necessity. Declamation on this subject, as well as on many others, deserves little attention.

Lenity, however amiable its motive, when *ill-judged* and excessive, is in effect cruelty. Impunity, says Cicero, is the greatest incitement to the commission of offences. *Impunitas peccandi maxima illecebra.* It is easy to enlarge in its praise, and almost any thing advanced in recommendation of it will find an attentive audience. But when speculation is reduced to practice, the sober decisions of experience must supersede the flourishes of fanciful declamation. Artificial rhetoric may adorn any quality and recommend any conduct, but nothing is permanently advantageous, or can be confidently relied on, which has not the sanction of the mother of wisdom, experience. Some degree of severity is, and has ever been adopted in our best seminaries;—and the general practice as well as reason, may justify it; for it cannot be supposed, that all the masters who have presided in our public schools, have been injudicious or inhumane.

These are the sentiments of the philosophic Knox, Fellow of St. John's College, Oxford, England, and who spent a life in the management of the young.

What says Dr. South on this subject? It is to be wished, he observes, that the constitution of man's nature were such, that it might be kept in the right course by the mild addresses of reason, and the gentle arts of persuasion; and that the studies of humanity might be carried on only by the ways of humanity; but unless youth are all made up of goodness and ingenuity, this is a felicity not to be hoped for, and therefore it is certain, that in some cases, and with some natures austerity must be used; there being such a mixture in the composition of youth, that *while the man is to be instructed, there is something of the brute also to be chastised.*

Dr. Priestly, well known in the philosophic world, makes the following judicious remarks.—It is of great importance that children and young persons be accustomed to submit, without difficulty and reluctance, to proper authority; by which it is meant, such authority as it is for *their own good, and the good of society*, that they should submit to; because that habit of ready submission, and the temper of mind which accompanies it, will be of unspeakable service to them, and to every society of which they shall be members, through life, Now this can only be enforced by the parent, or teacher, absolutely insisting upon submission, without ever retracting what has been once threatened for an offence, unless some sufficient and manifest reason intervene.

Plato.—The following is an admirable sentiment of that illustrious Greek philosopher. I know not, he remarks, on what a serious and sensible man should rather employ himself, than on his son, that he may be rendered as good a man as possible.

Juvenal.—*Gratum est, quod patriæ civem populoque dedisti,*
Si facis ut patriæ idoneus—
Plurimum enim intererit quibus artibus et quibus
hunc Tu (i. e. Pater)
Moribus institutas.

We thank you, says he, for giving your country a new member of it, *provided you make him a useful member:* for, it will make a great difference by what qualifications and what manners you, the father, *form him.*

Is there not much truth in the remark of Quintilian? And what reflecting person does not see the tendency of such conduct? Gaudemus, si quid (liberi) licentius dixerint; *risu* et osculo excipimus verba *ingenuis* indigna;—nos docuimus, ex nobis audierunt. —*We are pleased if our children talk a little licentiously. We receive them with smiles and kisses, if they bring out some low and vulgar expression.—We teach them all these things; they have heard them from ourselves.*

If we mistake not, it was the celebrated Dr. Johnson who remarked, that "due correction in itself is not cruel." No severity can be deemed cruel which vice and obstinacy make necessary. The greatest cruelty would be to desist, and leave obdurate and corrupt children, too careless for instruction, and too much hardened for reproof. Locke, one of the best writers of England, in his treatise on Education, mentions a mother with applause, who corrected her child eight times before she subdued it; for, had she stopped at the seventh act of correction, her daughter, says he, would have been ruined. As it is with judicious and conscientious parents at home, so it should be with wise and just teachers at school.

In the discourses on moral instruction by the Rev. Mr. Abercrombie, we find the necessity of discipline urged with great force.

He rejects the idea, that children are to be brought to do what is right by what is called mere moral influence, by *reasoning* with those who have no *reason*, and appealing to their sensibilities while their present gratifications are concerned. Like every man, conversant with human nature, he saw that it was equally as useless to urge by appeals to *reason*, the great mass of the young to do nothing except what is right, as it would be to preach from the pulpit, that every person's conduct and life should be governed by the pure precepts of the christian religion, and to expect such a result from such an appeal. It is well known how far a reclaimation of the vicious is effected by mere *talk;* and we apprehend, that if the safety and happiness of society depended upon the efficacy of mere words without law and subordination, there would be but little safety from the knife of the assassin, or the depredations of the robber. It is, to say the least of it, a mark of the want of a

due knowledge of human nature, or, of an overweening idea of lenity which often springs from a desire of popularity, or from a mistaken view of the just mode of training youth. Children are miniatures of grown people; are actuated by the same vices and passions, and are animated by the same hopes and fears. On the latter, it is true, they act upon a more extensive scale than on the former. They differ in intensity of action, but not in nature.

But we return to Mr. Abercrombie. He says, that a just and impartial discipline is a necessary part of education. It often prevents the necessity of severe punishment. Children brought up discreetly at home, seldom want correction at school; those only need it, who have been injured by the misplaced indulgence of their parents. In practical education, it is the duty of parents to recommend, and when necessary, compel their children to obey the rules and regulations of the school, and not impose that task upon the teacher, which belongs exclusively to themselves. Parental admonition and cognizance of their children's bad conduct at school, have more effect upon them than teachers' words, or, mere lectures about duty and moral conduct. Children know what obedience is as well as grown people; they know as well what idleness is; what obstinacy is; what want of truth is; and, surely if they *wantonly* do wrong in any of these matters, and repeat it, they deserve correction. To allow them to do these things, or to trample upon order and regulations, either at school or at home, or to spend their time in trifling or idleness, will be productive to them of far more serious consequences in after life, than they themselves can anticipate, or weak and ill-judging persons are aware.

MIAMI UNIVERSITY.

The friends of literature and science have cause to rejoice at the growing prospects of education. In every section of our country the public mind seems directed towards it, and the improvement of schools and colleges. From this attention, we may expect much good to result: a reformation of abuses, where it may be necessary—the employment of men of *masculine*, not *feminine* intellect, and of high-minded character, and the depression of some of those places, yclept colleges or universities, which, not being superior to good grammar schools, yet aim to exalt themselves by

outward show and pompous pretensions, to an eminent position. If schools, over which ability and science do not preside, are of little use, it is equally certain that colleges *in name only*, and which arrogate to themselves much, without any foundation, are still less so; because, from such institutions it cannot be expected that students will obtain any thing more than the mere husks of learning and an overweening vanity and self-importance, by no means indicative of disciplined intellect or extensive literary acquisitions.

There is scarcely a state which has not a 'something' called a college or a university; and it is well known that some of these 'somethings,' are mere non-entities—mere shadows—literary traps, which arrest those who think that the essence of all science is acquired, when a piece of sheep-skin is obtained from the hands of learned professors. Nowadays these certificates of knowledge have become almost valueless—rather marks of the ease with which a college course is run through, than of the labor of mind necessary to solid and enlarged attainments. Our youth of some sixteen or seventeen years of age, in this day of experiment and light reading, of literary horse-racing, gossipping and management, may become wise and accomplished in all things, in law, in medicine, and philosophy, by merely listening to the expositions and comments of erudite professors. The times are glorious for thick heads and dronish beings. Students, to arrive at intellectual excellence, need not think for themselves, nor study; they may sit still, or sleep; knowledge will come pouring into their minds, and in due time their diplomas will come also as a matter of course.

We should like to know why there is such a rage for new colleges. It appears to us, that the foundation on which must rest the permanency of colleges—we mean good academies—is too much overlooked. In building a church who would think of beginning at the steeple, and proceeding downwards to its base? And yet it would be as reasonable in the latter case, as it is to bring into existence what are called colleges, and pay no attention to the preparatory schools. All that can be said in favor of universities is, that, with scientific men at their head, they carry out and finish what good grammar schools have begun. If in these, therefore, the elements or principles are correctly taught, and young minds are properly disciplined and prepared to take hold of studies in an advancing order, colleges would stand upon much firmer ground, and be far more extensively useful than they now are. The truth is, the character of elementary seminaries, and the progressive steps by which youth ascend the hill of science, are too often wholly overlooked; but we believe there are few who, on mature consideration, are so dull as not to see that a solid preparation, in order to a collegiate course, is

indispensable to future progress, and that this preparation is only to be secured in academic institutions, under the guidance of men of experience, and science, and a correct mode of instruction.

Among those conspicuous in the west, *Miami University* at Oxford, in this State, has long stood high in public estimation. It is one of the oldest, and we believe, the best endowed in the state. The Trustees seem to have been aware of the necessity of efficiently preparing youth before entrance upon their collegiate course. To this, therefore, they have given due attention. This is as it should be. They have taken the right step; and are still active in using every means to elevate, as far as possible, the elementary department. They have, within the last year, effected much; and if they continue the same efficient zeal, they cannot fail to do much more. All with whom we have conversed, and who are well acquainted with the present condition of the institution, agree in the belief, that it has never been as flourishing as it is at present, and they attribute its late prosperity to the attention, harmony, and energy of the Professors and Trustees.

We have not room to speak at large on the new arrangements which have been adopted; we can only subjoin two or three leading features, relating to the preparatory department.

1. That there shall be a competent teacher in the department for every fifteen or twenty students. Under this part of the arrangement, it is believed that as much solid and useful instruction may be given in *one year*, as is usually given in two or three years in a promiscuous school.

2. That every boy under fourteen years of age, shall be allowed to board or lodge only in the family, or at the boarding house assigned him by the Superintendent and President.

3. That the funds and expenditures of every one in the department, shall be at all times, under the control of some approved individual in Oxford.

Every person who has visited Oxford, acknowledges that a more favorable situation for a literary institution could scarcely have been selected. The accommodations of Miami University are ample, and its pecuniary means adequate to extend them as far as may be required. The fund of the institution being certain and large, the Trustees have the power depending on no contingency or popular movement, of securing men of the first talents and attainments, and thus increasing its claims to usefulness upon the citizens of the West, which it has already so justly merited under the direction of the present Trustees and Professors.

MECHANICS' INSTITUTE.

Dr. John D. Craig has just closed his second course of Lectures on Mechanical and Experimental Philosophy.

The first class was composed of females, chiefly young ladies, some of whom were teachers. It consisted at first of eighty-two members; all of them, however, did not attend the whole course, which comprised sixty lectures. The subjects of discussion were illustrated by the admirable philosophic apparatus of the Institute.

A similar class will be formed in a few days, when it is hoped a greater number will attend, as the season will be more favorable. The lectures to the ladies' class will be given, as usual, in the daytime, after school hours.

The second course was especially for young men, though a place was reserved for ladies, of whom several attended. This class consisted of one hundred and twenty, some of whom also were teachers, both male and female. This course, which was given in the evenings, was more extensive than the former, embracing seventy lectures.

The success of Dr. Craig as a lecturer on Natural Philosophy is almost unequalled. His profound knowledge of Mathematics and Chemistry, his general acquaintance with the departments of natural science, his plain and unostentatious manner, together with his skill as an experimenter, give him a decided superiority over most men.

An institution of the cast and purpose of the Institute deserves attention and support for many reasons, and one important one among these, is the influence which it will exert in the cause of education, by diffusing a taste for manly and scientific knowledge in opposition to that propagated by *whining superficialism*, which adapts itself to the caprices and feelings of those who see no difference between things useful and excellent, and those useless and contemptible.

To those who are preparing themselves for the profession of teaching, the lectures and instructions of Dr. Craig hold out great advantages.—There has been much *talk* about seminaries for instructors, and certain modes of preparing them; but after all, we believe it will be allowed by those capable of judging, that no man or woman can be made a teacher by any kind of *mechanical routine*, or by mere verbal directions. Knowledge and mind are required; and if the latter is possessed by individuals, they can acquire the former by due study and the instructions of scientific men, equally as well, if not better than by going through a *four years' siege of forms, in any Normal school.* The reason that there is so much and just complaint against schools in the United States and elsewhere, is because there is a scarcity of cultivated

mind engaged, and this arises from the fact, that all other professions hold out higher pecuniary inducements to the exertion of talents and intellectual attainments. If in private or public schools and colleges young men can be prepared for grappling with law or medicine, or divinity, we cannot see why these same schools and colleges cannot also do the same thing for those who intend to engage in teaching. If academies and universities are unable to give brains to those to whom nature has been sparing, it is conceived, it will be found as difficult for Normal or High schools to effect it. Mind and knowledge are necessary to successful teaching; and, if Providence has given the former, scientific instructors, with industry on the part of students, will give the latter. If these positions are true, it becomes those looking to the preceptorial office to seek individuals who possess both these, superadded to experience. —These are some of the reasons for recommending the labors of Dr. Craig and other capable men, to the attention of those who are about to devote themselves to the business of instruction.

STATISTICS OF EDUCATION IN EUROPE.

The following Table is made out principally from documents furnished me by the venerable Prof. Schwartz of Heidelberg, whose well known accuracy and extensive acquaintance with every thing pertaining to the subject, afford a sufficient guarantee for its general correctness. In examining the table, it should be remembered, that in Europe the proportion of children between the ages of 7 and 14 is to the whole population about as 1 to 6½.

C. E. Stowe.

Lane Seminary, Walnut Hills, March 1837.

Country.	Population.	Religion.	Primary schools	Class. & Profes'l Schools.	Universities.	Proprt'n of scholars to popula'n.
Russia	50,000,000	Greek Church	1,411	95&363	69&96	1 to 700
Greece	900,000	Greek Church	50			1 to 116
Ionian Republic	180,000	Greek Church	29			1 to 104
Austria and Hungary	42,000,000	Roman Catholic	2,900	128	10	1 to 12
France	32,660,000	Roman Catholic	20,000	350	50	1 to 30
Italy	12,000,000	Roman Catholic	7,722	29	23	1 to 70
Portugal	3,600,000	Roman Catholic	830	48	3	1 to 80
Spain	13,772,000	Roman Catholic	1,000	736	12	1 to 200
Prussia	15,123,000	Protestant	25,300	166	36	1 to 7½
Baden	1,208,600	Protestant	1,886	34	1	1 to 6½
Norway	950,000	Protestant	1,419		1	1 to 6
Denmark	2,000,000	Protestant	2,146		2	1 to 8
Scotland	2,100,000	Protestant			4	1 to 8
England and Wales	12,298,000	Protestant			3	1 to 10
Ireland	11,000,000	Roman Catholic			1	1 to 15

There are Districts in Ireland, in which the proportion of school children to the population is only as 1 to 500!

In England, popular education is at a lower ebb than in any other Protestant country of Europe. If we exclude the Sunday schools, the proportion of school children to the population is only as 1 to 17. In 1828, there were 1560 parishes entirely destitute of schools.

In some of the southern Provinces of France, the proportion of school children to the population is only as 1 to 230. Of the 70,000 children in Paris capable of attending school, not more than 30,000 are under instruction, and probably quite half of the population of the city are unable to read or write.

In Lombardy more attention is paid to popular education than in any other part of Italy. In 1833, there were in 2233 parishes, 3535 elementary schools with 165,770 scholars, besides 208 private and Sunday schools, with about 25,000 scholars In Cremona, of 1000 children capable of attending school, 916 were actually in the schools.

In the different countries of Europe, the proportion of scholars receiving a University education to the whole population is about as 1 to 3000. There are in all 105 Universities, with 70,230 students.

TO CORRESPONDENTS.

The Review of Mansfield's Political Grammar, and Address delivered before the College of Teachers at their last session, 1836, is the production of a scientific mind; the style is vigorous and chaste, and the whole article written with great energy. Its causticity, however, induces us to decline its insertion. Besides, it is too long, comprising some twenty pages of close writing. On other topics we should be glad to hear from the same source. It has been returned to the author through the Post Office.

If —— will revise his remarks on Smith's Geography, and omit those which we have marked in the manuscript, (returned to him) they shall have place in the Journal. We do not like the work, nor do we consider it equal in matter and arrangement to some others already before the public; but, our opinion of it shall not be made a reason for inserting an article breathing personalities.

We have received a pamphlet from Dr. Lindsley, President of Nashville College, containing an interesting statement of the condition of that Institution. We have mislaid it; but its examination impressed us with the belief, that it is among the most efficient Literary Institutions in the West. The reputation of Dr. Lindsley, as an eminent scholar, is well known; and the able professors connected with him, cannot fail by their exertions to sustain the high character which it bears.

Several Communications on hand.

ABSTRACT OF METEOROLOGICAL OBSERVATIONS

FOR THE MONTH OF FEBRUARY, 1837, TAKEN AT WOODWARD COLLEGE, CINCINNATI—BY JOSEPH RAY, M. D., PROF. MATH.

Feb. 1837	Thermometer. min	max	m tp	Barom. mn ht inches	Course wind AM PM	charac'r wind	rain and snow.	charac'r weather.	Miscellany.
1	32.0	41.0	34.7	29.183	SW-W	lt. wd		variable	
2	22.0	40.0	29.2	29.290	W-W	lt. wd		variable	
3	23.0	42.0	35.5	29.193	S-S	lt. bre		variable	
4	40.0	61.0	50.8	29.161	SE-SE	lt. bre	·11	variable	
● 5	43.0	61.0	48.3	29.351	E-E	lt, bre		variable	rain night
6	37.0	66.0	52.3	29.350	NE-NE	lt. bre		fair	
7	46.0	61.0	51.3	29.041	SE-S	lt, bre	·52	variable	
8	33 0	43.0	34.0	29.003	NE-NE	lt. wd	·04	cloudy	
9	27.0	35.0	30.2	29.337	NE-N	str. bre		variable	
10	28.0	40.0	32.5	29.383	W-W	str. bre		variable	canal open
11	25.0	35.0	28.5	29.380	W-W	str. bre		fair	river rising
◐ 12	22.0	40.0	29.8	29.353	W-W	str. wd		clear	rapidly & full
13	13.0	29.0	23,8	29.720	W-W	lt. wd		clear	of All'ghy ice
14	26.0	53.0	44.3	29.240	S-S	str. wd	·11	variable	5 bts fr Pits'g
15	49.0	60.0	48.0	29.167	SW-SW	lt. wd	·25	variable	wet night
16	25.0	39.0	27.8	28.852	NE-N	str. wd	·38	cloudy	snow storm
17	14.0	28.0	19.0	29.317	NW-NW	lt. wd		fair	
18	8.0	31.0	23.7	29.583	W-SW	str. bre		clear	
19	28.0	47.0	41.0	29.362	S-S	lt, bre	·04	variable	
○ 20	40.0	47.0	43.3	29,093	S-S	lt, bre	·15	cloudy	
21	33.0	49.0	38.8	29.403	E-E	lt. bre		fair	wet night
22	33.0	43.0	41.5	29.237	E-E	lt. bre	1·12	cloudy	drizzly day &
23	38.0	53.0	44.3	28.720	SW-W	str. wd	·41	cloudy	wet day
24	34.0	46.0	37.0	29.287	W-W	lt. wd		variable	
25	28.0	49.0	33.3	29.330	W-W	lt. wd		clear	
26	26 0	57.0	44.8	29.050	SW-SW	lt. wd	·12	fair	
◑ 27	27.0	41.0	28.3	28.950	NE-NW	str. wd	·18	cloudy	snowy day
28	19.0	34.0	28.8	29.203	W-W	lt. wd		cloudy	

Mean temperature of the air (Fahrenheit's scale)	30°·6
Maximum height of thermometer	66°·0
Minimum height of thermometer	8°·0
Range of thermometer	58°
Warmest day, Feb. 6th.	
Coldest day, Feb. 19.	
Mean height of barometer, (English inches,)	29·2336
Maximum height of barometer,	29·81
Minimum height of barometer,	28·54
Range of barometer,	1·27
Perpendicular depth of rain and melted snow, (English inches,)	3·43

Wind.—N. 1 day—N. E. 3½ days—E. 3 days—S. E. 1½ days—S. 4½ days—S. W. 3½ days—W. 9½ days—N. W. 1½ day.

Weather.—Clear and fair 9 days—variable 12 days—cloudy 7 days.

Canal navigable from Feb, 10th. Ohio river above this city navigable from Feb. 14. In the years 1835 and 1836, February was the coldest month; but the present year, the mean temperature is 6½ degrees higher than the month of January.